Title: Hotel Management Information System

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Abstract

The proposed system to be developed is a web application of Hotel Management Information System. The target users include guests and staffs of the hotel. Thereby, this system does not only serve as a reservation system but also incorporates administration module as well.

With online reservation system guest will be in control of the reservation process from the beginning until the end. Besides, they can make reservation anytime they want with conditions they have Internet access. While for the administrators, they can log on to the system and achieve hotel's database and perform analysis on the data stored. This function can help them to decide hotel's future marketing strategy and attract customer attention by knowing their preferences.

For this project, I would follow the waterfall methodology because waterfall model is used if the problem is very well understood; linear sequence of steps that progress from start to finish without revisiting any previous step therefore this methodology is suitable for system where iteration is not necessary.

In terms of system development, I proposed to use .NET technology form Microsoft which is ASP.NET and using Microsoft Visual Studio.NET as the web application development tool. Besides that I proposed to use SQL Server 2000 for database management.

Acknowledgement

To accomplish this project, I have learned a great deal and have stumbled several times in the process. Without the constant help of a number of people correcting my mistakes, answering my question, contributing to the vast amount of time, and reassuring me in the myriad times of self-doubt, I wonder if I could finally make up this project. Therefore, I would like to express my deepest gratitude to those people who were helping me in this project.

First and foremost, I wish to thank my supervisor Prof. Madya Dr.Diljit Singh for his patient when entertain my question and without his guidance I would be lost.

Never forgotten, I must express my deepest appreciation to my moderator for this project, Pn Fariza for giving me precious suggestion during viva presentation and Pn.Maizatul for being my moderator lecturer for WXES 3182.

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Chapter One Introduction

1.0 Background to Project

The hotel industry is one of the oldest service industries known to mankind. Hotel can be defined as an establishment held out by proprietor as offering food, drink and if so required, sleeping accommodation, without special contract, to any traveler presenting himself who appears able and willing to pay a reasonable sum for the services and facilities provided and who is in fit state to be received.

To make the stay of guests at a hotel an enjoyable and memorable experience, efficiency and control is of utmost important. Efficiency and control will make the guests return to the hotel time and again.

In today's competitive world, information about business at fingertips is the key of success. Hotels today need a reliable and professional information system which provides key information for day to day operations to maintain high level and quality of guest services that travelers world over have started expecting of hospitality industry. Besides, it is also essential to achieve treasure-trove of information accumulated over a period of time to analyze the past trends so that hoteliers can accurately forecast the future.

1.1 Project Overview

This project aims at developing a web application that contains features of Front Office system and System Administration for medium size hotel. In Front Office system, this project proposed to handle major aspects of the reservation process and System Administration would create 'user profiles' to associate options accessible to a group of

users. This System Administration would define users of the system who are managers in the hotel and system will assign their passwords, define the extent of access, associate 'user profile' to them.

1.2 Objectives of Project

This project attempts to build the framework for a Hotel Management Information System .The design I propose is technologically driven. Therefore, it is only suitable for hotel, which the marginal cost of providing a service via technology is less than the marginal cost of providing an equivalent service via non-technological means. To be realistic, this project will focus on the needs of an actual commercial entity. Specifically, the proposed system includes two main modules stated below:

i.Online reservation module

This module enable guests to make room reservation via an online application at the convenience of their Internet access .For example, it includes an availability check function which allows visitors to check the available rooms during their intended date of stay through the site itself etc. In short, I propose this module should be able to handle major aspects of reservation process.

ii Administration module

Administration module includes two basic actions, which is the password and login requirement and manipulation of data. Administrators are able to make analysis such as the customer preferences from the database and generate relevant report that can be further refine quality of the hotel services. This is due to managers need summary information from which they can analyze trends that affect the hotel operation. They

need to find the critical factors affecting the success of the hotel, and how best to adjust those factors to improve the success of the hotel.

Though I only mentioned above two modules for the scope of this project, there are a few other modules that closely related to these two main modules in order to support them. These modules are front desk, profile and guest history, reception, cashiering.

1.3 Scope of the Project

Several considerations have to be made during the implementation of application in this project, this is due to it is impossible to develop whole Front Office system and System Administration which demands a great deal of resources and time. Therefore, this project including online reservation module from Front Office system and administration module from System Administration under Hotel Management Information system.

The following is not covered in this project:

Housekeeping module, which responsible for maintenance and upkeep of room, Materials Management and Distribution module which takes care of materials and their proper distributions, Food and Beverage module and Banqueting module which takes care of large gathering and functions.

1.4 Importance of Project

This proposed system intend to maximize the organization profit and open up new market by possessing online reservation service. This project attempts to include front-end system features that easy to learn and use. Besides, front office system facilitates the

availability of enough information for the administrator of higher management level to make accurate and timely decision.

1.5 Definitions

Front office system includes following parameters:

Setting up common codes for Guest Attributes, Corporate Policies, Sales Classifications, Hotel Facilities, Room Attributes, Sales and Marketing Codes etc.

Online reservation

Reservation simplifies tasks of making a reservation by providing a real-time online information on room availability.

House Keeping

The Housekeeping module seamlessly integrates with the core modules updating the room availability status on-line.

Main Cashier

Cashiering module provides a comprehensive range of functions to handle Posting of Checks & Room Charges, Advances, Receipts, Refunds, Discounts, etc.

Night Audit

Night Audit module allows the Night Auditor to check all revenues and collection postings to ensure accuracy and completeness of transactions.

Sales & Marketing

Sales & Marketing module maintains corporate customer details, quotation and special services offered.

Chapter Two Literature Review

2.0 Review of Literature

This chapter will describe in detail the various studies and research done on the topics of existing online room reservation and hotel management system and collect information that includes e-commerce, via Internet, and involves tremendous software and technologies. It is the objective of this section to find out systematically all those studies and surveys because it will influence my decision upon selection of tools and development methods of this project, in addition, this literature review also facilitate better understanding of the procedures and functions needed.

2.1 Role of Literature Review

The purpose of literature review is to organize current knowledge on an issue that relates to the topic of research. Literature review is an important process in a system development and it provides the necessary background information and thus literature review acts as a base to begin a research .At this crucial stage, findings, summary, analysis of the system will be done .This is to ensure the thorough understanding of the components that make up the system and the system itself. Thus, I can find the most suitable software and tools to use.

2.2 Approaches to Literature Review

In order to accomplish literature review, I have to search for relevant information from various resources related to my study before I summarized, interpreted and evaluated

them. Basically, each source will yield different information and facts and it depends on how the search was done.

For this project, I used a few approaches listed below:

a. The Internet is the major source of information for this project and information were gathered from various sites such as software to be used to develop this project, information about development tools, information on various programming concept, examples of reservation web sites. The search engine used to gather all this information includes Yahoo search, Altavista search, MSN search, Google search, etc. Example of keywords that I used to search the relevant information including:

hotel management system + system design, hotel reservation system + methodology, system development life cycle + hotel management system, SQL server 2000, ASP.NET, etc.

b. Books, e-book, and others were read to get more information on tourism, hotel management concept and various information on programming tools and concept.

2.3 Findings

2.3.1 Electronic Commerce

2.3.1.1 Introduction and Advantages of E-Commerce

Electronic commerce or e-commerce, the exchange of goods and services by means of the Internet or other computer networks. E-commerce follows the same basic principles as traditional commerce –that is, buyers and sellers come together to exchange goods for money. But rather than conducting business in the traditional way ,in e-commerce buyers and sellers transact business over networked computers.

E-commerce offers customers convenience. They can visit the World Wide Web sites of multiple vendors 24 hours a day and seven days a week to compare prices and make purchases, without having to leave their homes or offices.

For sellers, e-commerce offers a way to cut costs and expand their markets. They do not need to build office, staff, maintain a store or print and distribute mail order catalogs. Automated order tracking and billing systems cut additional labor costs, and if the product or service can be download, e-commerce firms have no distribution costs. Because they sell over the global Internet, sellers have the potential to market their products or services globally and are not limited by the physical location of a store. Internet technologies also permit sellers to track the interests and preferences of their customers with the customer's permission and then use this information to build an ongoing relationship with the customer by customizing products and services to meet the customer's needs.

2.3.1.2 Types of E-Commerce

A variety of businesses are conducted online, including retail businesses that sell products to consumers, service providers that sell services to consumers, auctioneers that create a marketplace for products and services , and business to business commerce. Retail transactions make up the largest part of e-commerce . This project can be categorized in the Service Transactions type of e-commerce.

2.3.1.3 Disadvantages of E-Commerce

Consumers are reluctant to buy some products online, because they cannot feel the products or services. Many people also consider shopping an enjoyable social

experience that cannot duplicate through online transaction. Consumers also need to be reassured that credit card transactions are secure and that their privacy is protected.

2.3.1.4 E-Commerce Issues

a.)Security

Due to security is a top concern for many web shoppers; merchants should make reasonable efforts to ensure the security of consumers transaction information. Furthermore, these measure should be consistent with current industry standards and should include the use of password protected access, encryption or similar technology to protect information about the consumer and the transaction. Besides that, merchant should adopt policies that are consistent with existing industry standards and legal requirements. Security risks can include distortion of data, or broadcasting of data. All these cost money in terms of data recovery and goodwill recovery. Generally, the concern on the web security is unfounded. Most web store owners offer Secure Socket Layer service so that information cannot be interpreted by cyber-hackers. Another security protocol, Security Electronic Transaction is also commonly used throughout the world. In fact, there are two widely known security protocols each providing a security way to make payment over the Internet, thus enhancing security on the net.

b.)Encryption

Computer based encryption using personal computer is capable of becoming sufficiently secure to prevent unauthorized access. However, the ability to encrypt messages is presently restricted by the requirements of nation states to have access to all written communications. Any company establishing system, which cannot be broken by nations security services, is therefore subject to prosecution .

This inevitably limits the efficiency of encryption .A protected legal wrangle is going on between RSA Data and the US government is rival digital signature technology clipper .A number of software companies are presently developing encryption software, some of which are based on patented algorithms developed by RSA. Encryption has been become a key element in discussions concerning commerce on the Internet. Public –key cryptography, for example, makes it possible to 'sign ' documents so that two recipients can assure that the source of the message is authentic as well as to 'seal' a document, ensuring that no one except for the recipient can open it. Encryption facilitates services that require privacy, such as home banking and electronic money transfer between businesses.

2.3.2 Review of Existing System

2.3.2.1 Manual system

Traditionally, manual room reservation systems are used to make room bookings and keep simple updates on the availability of rooms. All inventory and transactions are done manually by a front desk assistant or a receptionist. Manual system puts great emphasis on the filing system in order to keep a fairly manageable record. However, manual maintenance proved to be tedious, difficult, time consuming and thus prone to human errors .For example, if a hotel owner wants to find out the hotel's peak seasons, he will have to manually go through hundreds and hundreds of records of daily reservations for the past few years, just to collect enough data for an appropriate analysis. Easily be seen, there are some disadvantages of the manual system. The following are the drawbacks highlighted:

a. Difficulty and time consuming in determining room availability.

b. Records kept are vulnerable to catastrophe.

c. Tend to occur human errors .

d. Unauthorized persons can easily modify records for their personal gain where security is a controversial issue.

2.3.2.2 Computerized System

The computerized system became popular system among small-medium scale hotels after being introduced. A computerized room reservation system combines the convenience of the computer features and facilitates administrator who will administer the transaction and room availability. This system enables room availability control to be done easily if the system is powerful enough to detect the number of rooms that is occupied, booked or available. Each transaction done will be recorded into the database to enable the hotel administrator to keep track of every successful transaction performed. Furthermore, the database will be able to make immediate update of completed transactions .This ensures that inventory are always up to date and thus reduce the hassle of retrieving data and cuts down processing cost of manual work at the same time . Anyhow, human errors would still occur even if it would be less compared to manual reservation system. There might still be occurrence of untidy number of availability and booked rooms physically compared to as recorded in the system itself.

Besides, security is another issue of concern .If the system is not designed to prevent unauthorized access, some employees might take the opportunity to do illegal changes to the system. In order to prevent this phenomenon, a considerable amount of control should be possessed by the system.

2.3.2.3 Current Online Reservation System

We have stepped into the new millennium and information technology era , online hotel room reservation system are now a common sight in the Internet world .Furthermore, Malaysia as a beautiful country with a great potential in tourism industry serves as a place for hoteliers to extend their carrier. Current online reservation system prone to be user friendly, interactive, attractive and high in credibility. These features are essential to make a customer confidence with the system and thus the hotel itself.

Followings are the studies for existing web sites by two prestigious hotels in Kuala Lumpur that provide online reservation service:

i) JW Marriott, Kuala Lumpur

JW Marriott's reservation system divides the reservation process into six steps. Firstly, the system require customers to enter their check-in and check-out date before they able to check for room availability and rates. Next , types of rooms that are available will be shown to the guest together with the room rate and description for each room type. Guests then select the type of room they want and subsequently given option to select their accessibility preferences such as bed type, non-smoking room etc.

Next, system will notify customer to review the reservation information on the room type and preferences. Customers are not allowed to book a room without submitting valid credit card information. Eventually, if the credit card information submitted is valid, system will generate a confirmation note showing guests their personal details and request confirmation of the submitted details.

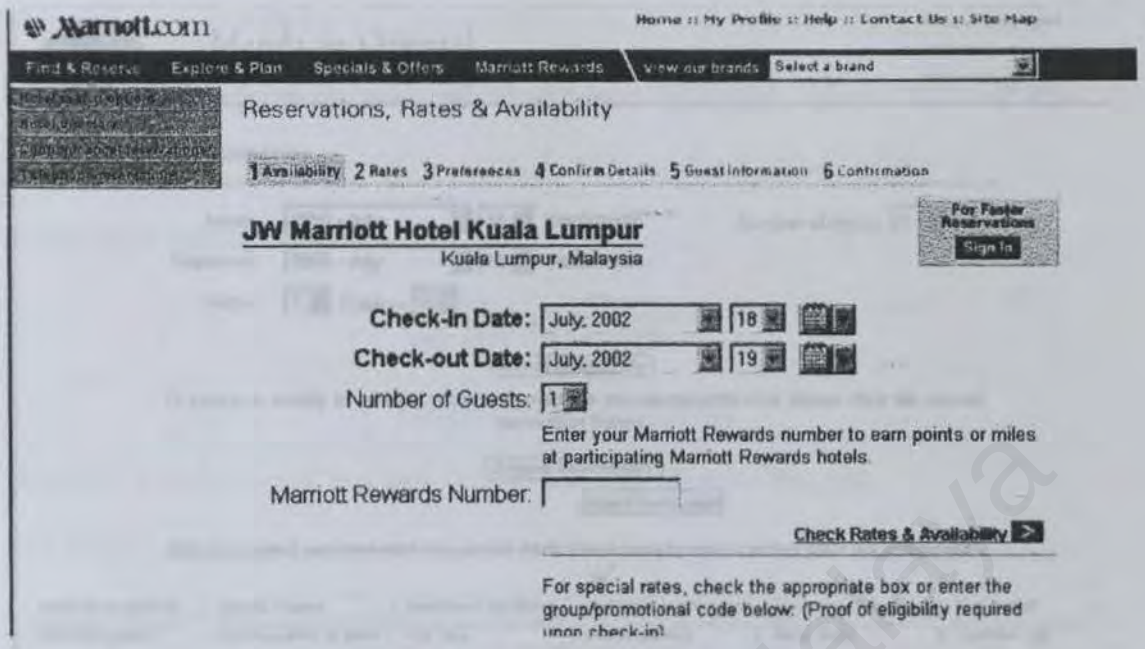

Figure 2.1: Interface of Hotel JW Marriott for reservation

ii) Mandarin Oriental, Kuala Lumpur

As normal, before making reservation, guests will have to check room availability according to their date of the arrival and departure. Room rates and room type are available to choose at the following procedure. Available rooms will be shown and guests are required to submit information required by the hotel such as guest's personal particulars and credit card number. Guests are not allowed to book a room without submitting valid credit card information. Guests only need to submit their particular once and consequent reservation require guests to login to the system using their email address and password. Every time a reservation is made their particulars will be shown for validation and amendments purposes. In addition, the amend reservation function is provided to allow the guests to modify or rectify wrong data by entering their email address and confirmation number

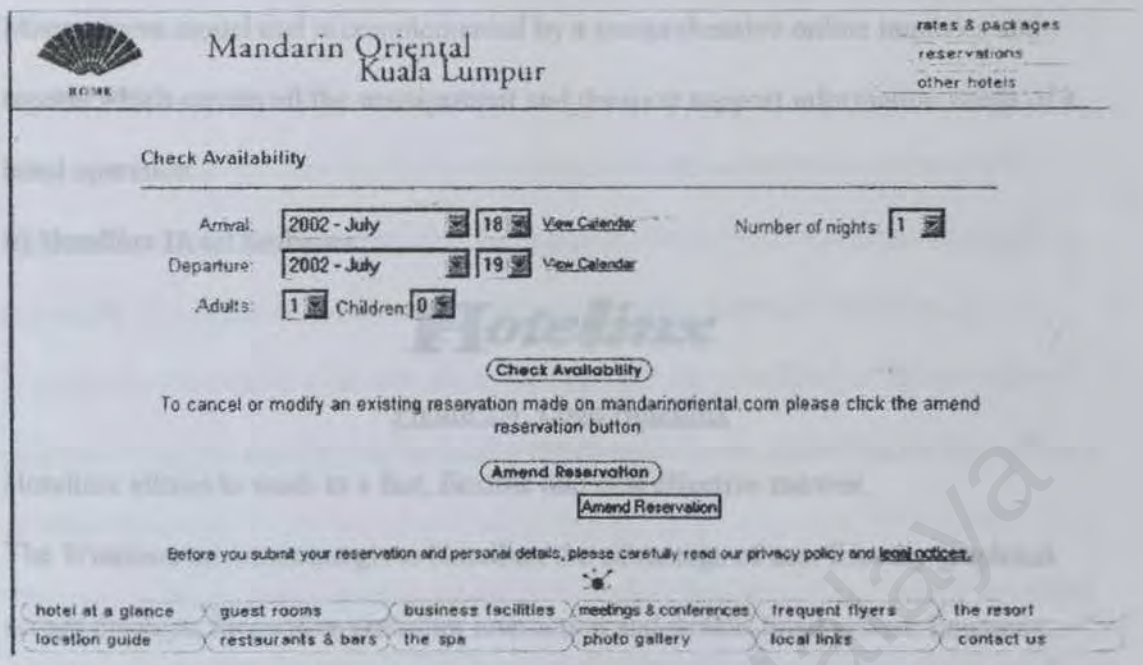

Figure 2.2: Interface of Hotel Mandarin Oriental for reservation.

2.3.2.4 Current Hotel Software

i) Fiesta Hotel Management Software

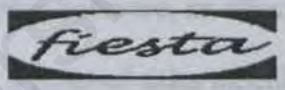

Figure 2.3: Logo Fiesta

Fiesta has been designed as a one-stop solution for the hospitality industry. Able to fit the needs of hotels from small, independently managed hotels to large chain hotels, Fiesta is an integrated enterprise software utilizing the intuitive Windows GUI interface. Fiesta's highly parameterized set-up simplifies customization requirements and reduces implementation cycle. Furthermore, this allows emulation of hotels' workflow to a large degree, thus contributing to improved efficiency and productivity.

Fiesta is organized around an Operational Management and Business Office

Management model and is complemented by a comprehensive online inquiries and reports which covers all the management and decision support information needs of a hotel operation.

ii) Hotellinx Hotel Software

Figure 2.4: Logo Hotellinx

Hotellinx allows to work in a fast, flexible and cost effective manner.

The Windows environment gives Hotellinx the advantage of user friendly graphical screen displays, innovative customer interaction and stream-lined system functions. Hotellinx can be modified according to the user's requirements. A beginner will find all functions set out in clear menus, a more advanced user may take advantage of time-saving shortcut selections. Hotellinx has full on-line help-facilities and comes with an extensive manual.

Hotellinx also includes the marketing software, an effective sales tool integrated with the hotel management programs and, a point-of-sales module for goods sold at front desk reception or for posting items onto a guest bill. Hotellinx is specifically designed for Windows, versatile and in its own class also when it comes to functionality and support.

2.3.3 Software and Technology

This section illustrates software and technology taken into my consideration when building the system. The main areas of research are system architecture, platform, web languages technology and database management system.

2.3.3.1 System Architecture

2.3.3.1.1 Client / Server Architecture

The client /server software architecture is a versatile, message-based and modular infrastructure that is intended to improve usability, flexibility, interoperability, and scalability as compared to centralized, mainframe, time sharing computing.

A client is defined as a requester of services and a server is defined as the provider of services. A single machine can be both a client and a server depending on the software configuration.

This approach introduced a database server to replace the file server. Using a relational database management system (DBMS), user queries could be answered directly. The client/server architecture reduced network traffic by providing a query response rather than total file transfer. It improves multi-user updating through a GUI front end to a shared database. In client/server architectures, Remote Procedure Calls (RPCs) or standard query language (SQL) statements are typically used to communicate between the client and server.

2.3.3.1.2 Two Tier Architecture

With two tier client/server architectures the user system interface is usually located in the user's desktop environment and the database management services are usually in a server that is a more powerful machine that services many clients. Processing management is split between the user system interface environment and the database management server environment. The database management server provides stored procedures and triggers.

The two-tier client/server architecture is a good solution for distributed computing when work groups are defined as a dozen to 100 people interacting on a LAN simultaneously. It does have a number of limitations. When the number of users exceeds 100, performance begins to deteriorate. This limitation is a result of the server maintaining a connection via "keep-alive" messages with each client, even when no work is being done. A second limitation of the two tier architecture is that implementation of processing management services using vendor proprietary database procedures restricts flexibility and choice of DBMS for applications. Finally, current implementations of the two-tier architecture provide limited flexibility in moving (repartitioning) program functionality from one server to another without manually regenerating procedural code.

2.3.3.2 Platform

A computer's "platform" is the basic manufacturer hardware and operating system that runs the various computer programs or "applications." On the other hand, when a computer is turned on it searches for instructions in its memory. These instructions tell the computer how to start up. Usually, one of the first sets of these instructions is a special program called the operating system ,which is the software that makes the computer work .It prompts the user (or other machines) for input and commands , reports the results of these commands and other operations , stores and manages data , and controls the sequence of the software and hardware action .When the user requests that a program run , the operating system load s the program in the computer 's memory and runs the program . Popular operating systems, such as Microsoft Windows and the Macintosh system (Mac OS), have graphical user interfaces (GUIs)-that use tiny pictures, or icons, to represent various files and

commands. To access these files or commands .the user clicks the mouse on the icon or presses a combination of keys on the keyboard. Some operation systems allow the user to carry out these tasks via voice, touch , or other input methods.

2.3.3.2.1 Windows 2000 Advanced Server

Windows 2000 Advanced Server includes all the new features of Windows 2000 Server, and in addition offers enhanced memory support, support for additional processors and clustering.

Enhanced memory and processor support means server applications can run faster, providing better response for users on the network. This memory support can be done using Enterprise Memory Architecture (EMA), it can run applications that take advantage of large amounts of physical memory on Windows 2000 Advanced Server .EMA supports two types of memory enhancement: application memory tuning –also known as 4-gigabyte tuning, and Physical Address Extension (PAE) X86.

Windows Clustering is a feature of Windows 2000 Advanced Server that provides multiple clustering technologies. Network Load Balancing is one of the feature comprise Windows Clustering, by using Network Load Balancing to build a server cluster, user can enhance the availability of Internet server programs such as those used on Web, proxy, Domain Name Service (DNS), FTP, virtual private network (VPN), and streaming media servers. At the same time, Network Load Balancing can help user to scale server's performance to keep up with the ever-increasing demands of your Internet-based clients.

Windows 2000 Advanced Server has various functions such as File server, Print server, Internet server, Multimedia server, Application server, development support,

networking and communications. It also takes care of server reliability, availability, scalability and security.

2.3.3.3 Web Application Languages

2.3.3.3.1 Hypertext Markup Languages (HTML)

Hypertext means text stored in electronic form with cross reference link between pages .HTML is a set of commands that get mixed in with text to describe how a Web page should appear. These commands are called tags .HTML pages are the standard interface to the Internet. They may include animated graphics, sound and video, complete interactive programs, and text. Millions of Web pages are retrieved each day from thousands of Web server computer around the world.

There are two basic approaches to making an HTML page: one can type out the text and HTML commands with a text editor , or one can use graphical software that generates the HTML commands .

2.3.3.3.2 Extensible Markup Language (XML)

XML, the eXtensible Markup Language, is not actually a language in its own right . It is a metalanguage used to construct other languages. XML is used to create structured, self-describing documents that conform to a set of rules created for each specific language. XML provides the basis for a wide variety of industry and discipline specific languages.

XML consists of both markup and content. Markup also referred to as tags, describes the content represented in the document. This flexible representation of data allows user to easily send and receive data, and transform data from one format to another .The uses of XML are rapidly expanding, their usage can be seen in E-business related information

such as pricing, inventory and transaction are represented in XML and transferred over the Internet using open standards and protocols.

Each XML language defines its own grammar, a specific set of rules governing the content and structure of documents written in that language. Since each language must fulfill this grammatical requirement, XML provides facilities for generically documenting the correct grammar of any derived language. Any XML parser can validate the structure of any XML document, given the rules of its language.

Using XML as a common base for higher –level language enables the interchange of data between software components, systems and enterprises. Parsing and translation tools written to handle any type of XML-based data can be employed to create and manipulate data in a uniform way, regardless of each document's semantic meaning

2.3.3.4 Web Technology

2.3.3.4.1 .NET Technology

The Microsoft® .NET Framework is the infrastructure for the overall .NET Platform. The common language runtime and class libraries (including Microsoft Windows® Forms, ADO.NET, and ASP.NET) combine to provide services and solutions that can be easily integrated within and across a variety of systems.

The .NET Framework provides a fully managed, protected, and feature-rich application execution environment, simplified development and deployment, and seamless integration with a wide variety of languages.

The .NET Framework is a collection of services and classes. It exists as a layer between the applications you write and the underlying operating system. This is a powerful

concept: The .NET Framework need not be a Windows-only solution. The .NET Framework could be moved to any operating system, meaning your .NET applications could be run on any operating system hosting the .NET Framework.

In addition, the .NET Framework is exciting because it encapsulates much of the basic functionality that used to have to be built into various programming languages. The .NET Framework has the code that makes Windows Forms work, so any language can use the built-in code in order to create and use standard Windows forms. In addition, Web Forms are part of the framework, so any .NET language could be used to create Web Applications. Additionally, this means that various programming elements will be the same across all languages; a Long data type will be the same size in all .NET languages. This is even more important when it comes to strings and arrays.

2.3.3.4.2 ASP.NET

ASP.NET is a set of technologies in the Microsoft .NET Framework for building Web applications and XML Web Services.ASP.NET pages execute on the server and generate markup such as HTML, WML or XML that is sent to a desktop or mobile browser. ASP.NET pages use a compiled, event –driven programming model that improves performance and enables the separation of application logic and user interface. ASP.NET pages and ASP.NET XML Web Services files contain server-side logic written in Visual Basic.NET,C#.NET, or any .NET compatible language . Web applications and XML Web Services take advantage of the features of the common language runtime, such as type safety, inheritance, language interoperability , versioning

, and integrated security . ASP.NET includes data access components that make it easier than ever for to design sites that allow users to interact with databases through Web pages.

ASP.NET provides a number of built-in performance enhancements that are not included in earlier versions of ASP. For example, instead of interpreting page code as is done in ASP, ASP.NET pages are dynamically compiled the first time they are requested using the common language runtime (CLR) just-in-time (JIT) compilation feature that converts ASP.NET managed page code into the native code of the processing server at run time.

Client-Server Interaction

ASP.NET applications are a mixture of client side markup and code, and server side processing. When an ASP.NET Web form page is downloaded to the visitor's Web browser, additional code is included to previous ASP versions. This extra codes enable richer form functionality, including server and client side events, validation, and the ability to maintain form value state. The server determines the visitor's browser type and sends markup to match the browser's abilities.

Some client interactions will be dealt with within the visitor's browser, while others will require information to be posted to the server for processing and the altered page returned.

As form responses are received, the form values are maintained in a new facility of ASP.NET "State Bags" and are compressed into a hidden form element containing the page "Viewstate". This allows the form elements that the visitor has interacted with to maintain the same values as when the page was submitted.

As illustrated, the browser can request information from and send information to the server using two HTTP methods, *GET* and *POST*. *GET* is simply the method in which the browser compiles a URL.A typical URL in this context will consist of a protocol, for example, HTTP for hypertext or FTP for file transfer, a fully qualified domain name, followed by a path, and then the page to *GET*.

When a browser sends information using the *POST* method, the parameters are compiled in the same way but sent separately in the HTTP header, and so are not seen in the URL portion of the browser like *GET* requests are. Forms often use *POST* for this very reason.

Other information goes into the HTTP request header, such as what browser the user is using and so on. As you will see later, your ASP can pick up this header information and the querystring parameter values.

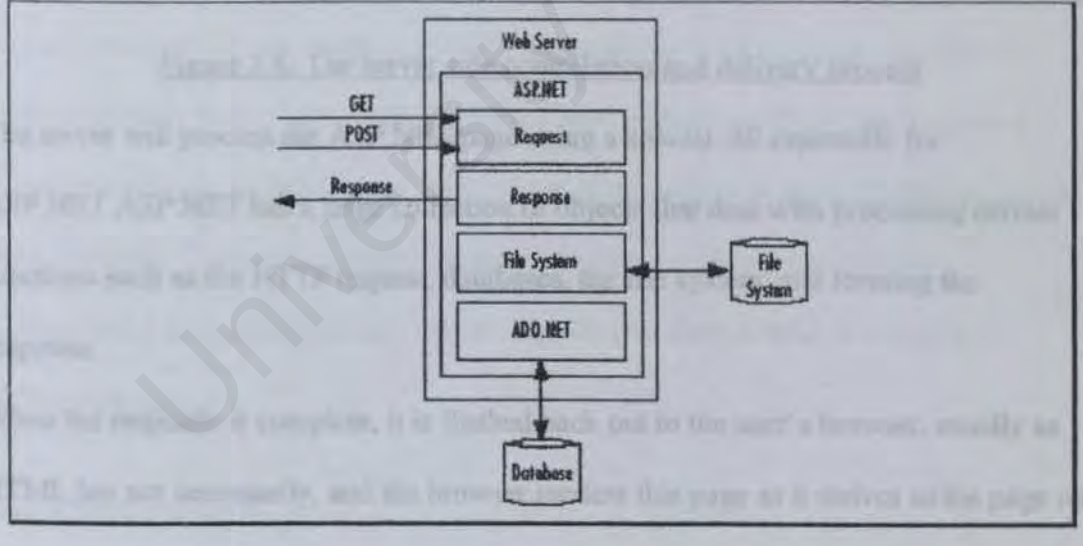

Figure 2.5: How the client and server communicate

Server-Side Processing

When the server receives this request, it will find the page that was requested using the path information specified, and the relevant system will process the page. In the case of Classic ASP, there was not much to this process, although a certain amount of caching happened. With ASP.NET the process is a fair amount more involved but provides for much faster processing and delivery.

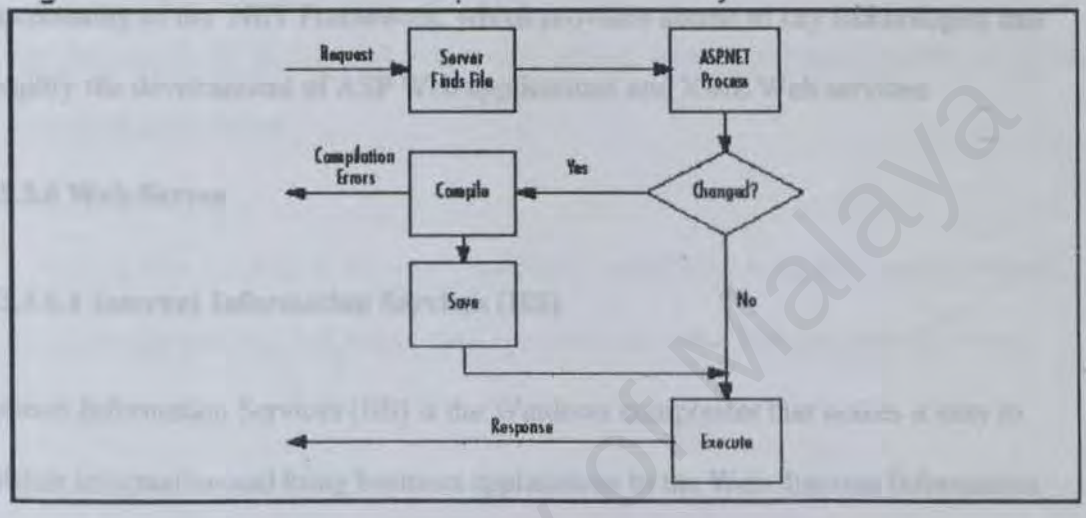

Figure 2.6: The server side compilation and delivery process

The server will process the ASP.NET page using a special .dll especially for ASP.NET.ASP.NET has a large collection of objects that deal with processing certain functions such as the HTTP request, databases, the file system, and forming the response.

When the response is complete, it is flushed back out to the user's browser, usually as HTML but not necessarily, and the browser renders this page as it arrives as the page on screen.

2.3.3.5 Web Application Development Tool

2.3.3.5.1 Microsoft Visual Studio.NET

Visual Studio .NET is a complete set of development tools for building ASP Web applications, XML Web services, desktop applications, and mobile applications. Visual Basic .NET, Visual C++ .NET, and Visual C# .NET all use the same integrated development environment (IDE), which allows them to share tools and facilitates in the creation of mixed-language solutions. In addition, these languages leverage the functionality of the .NET Framework, which provides access to key technologies that simplify the development of ASP Web applications and XML Web services.

2.3.3.6 Web Server

2.3.3.6.1 Internet Information Services (IIS)

Internet Information Services (IIS) is the Windows component that makes it easy to publish information and bring business applications to the Web. Internet Information Services makes it easy to create a strong platform for network applications and communications. Come along with Windows 2000 operating system , the Microsoft Management Console (MMC) is a generic way of managing all sorts of services, and is often preferred. The beauty of MMC is that it provides a central interface for administrating all sorts of services that are installed on the machine. It is useful to administrate IIS.

2.3.3.7 Web Browser

2.3.3.7.1 Internet Explorer 6

Internet Explorer is a product by Microsoft Corporation. Internet Explorer 6 is a set of core technologies in Windows XP Home Edition and Windows XP Professional, and is

available to users of Windows 98 ,Windows 98 Second Edition ,Windows Millennium Edition (Windows Me) ,Windows NT Workstation 4.0 , and Windows 2000 Professional operation systems.

- Web Privacy

Internet Explorer 6 includes many new and enhanced features to simplify tasks user perform each day on the Web, while also helping user to maintain the privacy of user personal information .

- Flexibility

With the new innovative browser capabilities including Media Bar, Image toolbar, Auto Image resizing and more , user can experience the Web the way user want .

- Reliability

Internet Explorer 6 offers a more stable and error-free browsing experience than ever before .New fault collection services help identify potential problems that need to be fixed in future updates to Windows Internet technologies.

2.3.3.8 Database Management System

2.3.3.8.1 SQL Server 2000

Microsoft SQL Server 2000 features include:

a)Internet Integration.

The SQL Server 2000 database engine includes integrated XML support. It also has the scalability, availability, and security features required to operate as the data storage component of the largest Web sites. The SQL Server 2000 programming

model is integrated with the Windows DNA architecture for developing Web applications, and SQL Server 2000 supports features such as English Query and the Microsoft Search Service to incorporate user-friendly queries and powerful search capabilities in Web applications.

b)Scalability and Availability.

The same database engine can be used across platforms ranging from laptop computers running Microsoft Windows® 98 through large, multiprocessor servers running Microsoft Windows 2000 Data Center Edition. SQL Server 2000 Enterprise Edition supports features such as federated servers, indexed views, and large memory support that allow it to scale to the performance levels required by the largest Web sites.

c)Enterprise-Level Database Features.

The SQL Server 2000 relational database engine supports the features required to support demanding data processing environments. The database engine protects data integrity while minimizing the overhead of managing thousands of users concurrently modifying the database. SQL Server 2000 distributed queries allow you to reference data from multiple sources as if it were a part of a SQL Server 2000 database, while at the same time, the distributed transaction support protects the integrity of any updates of the distributed data. Replication allows you to also maintain multiple copies of data, while ensuring that the separate copies remain synchronized. You can replicate a set of data to multiple, mobile, disconnected

users, have them work autonomously, and then merge their modifications back to the publisher.

d)Ease of installation, deployment, and use.

SQL Server 2000 includes a set of administrative and development tools that improve upon the process of installing, deploying, managing, and using SQL Server across several sites. SQL Server 2000 also supports a standards-based programming model integrated with the Windows DNA, making the use of SQL Server databases and data warehouses a seamless part of building powerful and scalable systems. These features allow you to rapidly deliver SQL Server applications that customers can implement with a minimum of installation and administrative overhead.

e)Data warehousing.

SQL Server 2000 includes tools for extracting and analyzing summary data for online analytical processing. SQL Server also includes tools for visually designing databases and analyzing data using English-based questions.

2.4 Summary of Literature

For conclusion, all the research done was to gather a clearer view on how to develop a better system. The information gained covers concept of e-commerce, review of existing system which include online reservation system and hotel management software, client server architecture, software and technology that suitable to use, including ASP.NET for building web application, Microsoft Visual Studio.NET which is web application development tool, operating system that suitable for this system which is Microsoft

Windows 2000 Advanced Server, SQL Server 2000 which is database management system proposed to use, web server from Microsoft Internet Information Service, web browser preferred is Internet Explorer.

2.5 Relationship to Proposed Project

This section I would explain how some important research done on literature review related to objective of this project.

E-commerce offers customers convenience where they can visit the World Wide Web sites of multiple vendors 24 hours a day and seven days a week. This features when applied to this project enable potential customer to make online reservation through their fingertips without time barrier.

Review existing system including current online reservation system and hotel management software is to observe good features from others to overcome shortcoming from my proposed project.

In terms of software and technology, the essential part is by using ASP.NET to accomplish web application is due to its powerful features even though it is quite new compare to other same level technology. Microsoft Visual Studio.Net is web application development tool that enable develop ASP.NET application, its multifunctional platform is very suitable for this project.

While in SQL Server 2000, Data Transformation Services (DTS) provides a set of services used to build a data warehouse or data mart. Decision support systems analyze data to find trends of interest to the database users. Online transaction processing databases store large numbers of records covering the details of each transaction, and

online analytical processing (OLAP) systems aggregate and summarize the information to speed analysis of the trends exhibited in the data. All this features do help me to accomplish administration module in this project.

Chapter Three Methodology

3.0 Introduction

This chapter discusses the methodology needed to complete this project, reasons for choosing the methodology in the system development life cycle. In addition, this chapter also includes proposal of tools to develop the system and why those tools are chosen. A detail discussion on the system analysis phase will also be presented here.

3.1 Project Objectives

This project attempts to build the framework for a Hotel Management System .The design I propose is technologically driven. Therefore, it is only suitable for hotel that where the marginal cost of providing a service via technology is less than the marginal cost of providing an equivalent service via non-technological means. To be realistic, this project will focus on the needs of an actual commercial entity.

Specifically, the proposed system includes two main modules stated below:

i.Online reservation module

This module enable guests to make room reservation via an online application at the convenience of their Internet access .For example, it includes an availability check function which allows visitors to check the available rooms during their intended date of stay through the site itself etc. In short, I propose this module should be able to handle major aspects of reservation process.

ii Administration module

Administration module includes two basic actions, which is the password and login requirement and manipulation of data. Administrators are able to make analysis such as the customer preferences from the database and generate relevant report that can be further improving quality of the hotel services. Therefore, managers need summary information from which they can analyze trends that affect the hotel operation. They need to find the critical factors affecting the success of the hotel, and how best to adjust those factors to improve the success of the hotel.

3.2 Development Methodology

Methodology is the science of how the system is developed. There are many types of software processing models available in the software engineering field that serve as the base for a system methodology .For example, the V model, prototyping model , spiral model and the waterfall model are the few more common models in use.

For this project, the methodology chosen is waterfall model.

3.2.1 Waterfall Model

The waterfall model is an approach to developing an information system or software product that is characterized by a linear sequence of steps that progress from start to finish without revisiting any previous step. The waterfall model is one of the oldest systems development models and is still probably the most commonly used.

In general, these are the steps:

1. The existing system is evaluated. Deficiencies are identified.
2. The new system requirements are defined. In particular, the deficiencies in the existing system must be addressed with specific proposals for improvement.

3. The proposed system is designed. Plans are to be laid out concerning the physical construction, hardware, operating systems, programming, communications, and security issues.

4. The new system is developed. The new components and programs must be obtained and installed. Users of the system must be trained in its use, and all aspects of performance must be tested. If necessary, adjustments must be made at this stage.

5. The system is put into use. This can be done in various ways. The new system can phase in, according to application or location, and the old system gradually replaced. In some cases, it may be more cost-effective to shut down the old system and implement the new system all at once.

6. Once the new system is up and running for a while, it should be exhaustively evaluated. Maintenance must be kept up rigorously at all times. Users of the system should be kept up-to-date concerning the latest modifications and procedures.

Critics of the waterfall model say that it doesn't allow sufficiently for error discovery and redesign. Besides, waterfall model can't get feedback from customer until whole process is complete.

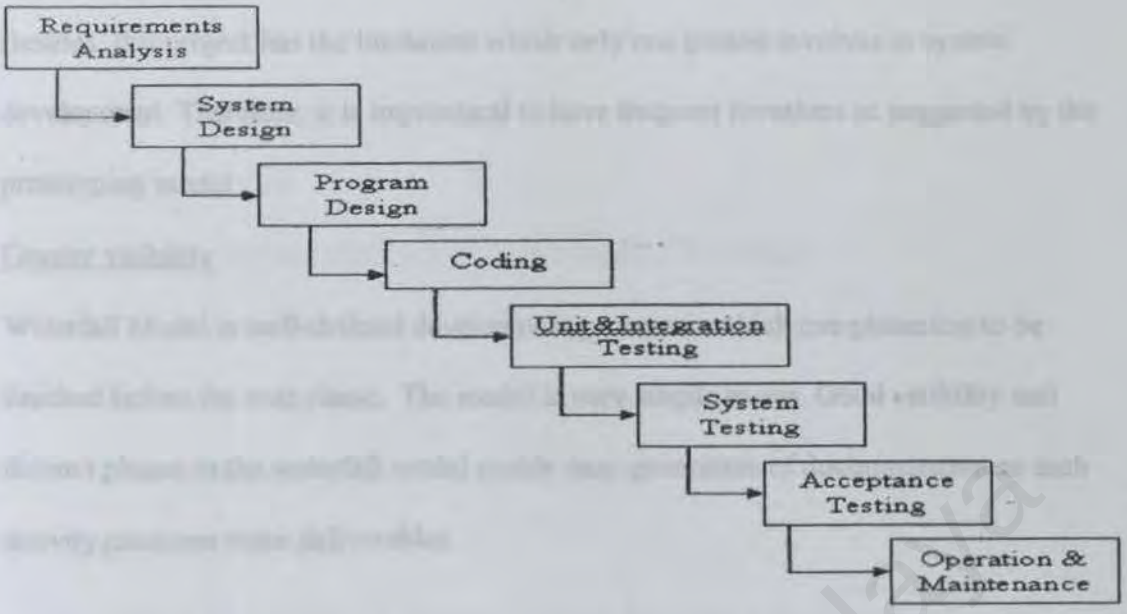

Figure 3.1: The Waterfall Model

3.3 Rationale for Proposed Methodology

The waterfall model was chosen as the development methodology as it has distinct features and advantages, which are suitable and relevant to my proposed system.

Rationale:

Waterfall model is used if the problem is very well understood.

For this project, the objectives and the requirements are clear. Furthermore, researches and information found through Internet and books give a well definition of the problems that may occur throughout the way and thus suitable solutions have been recognized.

Iteration is not necessary

There is not need to use prototype model, V model and the spiral model, which involves frequent iterations for discovering the requirements and possible risks of the system. This is due to thoughtful details about the system is full understood.

Besides, this project has the limitation which only one person involves in system development. Therefore, it is impractical to have frequent iterations as suggested by the prototyping model.

Greater visibility

Waterfall Model is well-defined development process in which one phase has to be finished before the next phase. The model is very simple to use. Good visibility and distinct phases in the waterfall model enable easy generation of documentation as each activity produces some deliverables.

3.4 Requirement Analysis

Requirement analysis enables the system engineer to specify software elements, and establishes design constraints that software must meet. A complete understanding of software requirement is essential to the success of a software development effort. Requirement describes the behaviors and activities of a system, such as its reaction to input and the state of each entity before and after an activity occurs. There are two types of requirements, which are functional requirement and nonfunctional requirement.

3.4.1 Functional Requirement

Online reservation module

- Allow guests to make reservation for a given set of dates
- Allow guests to modify reservation
- Allow guests to cancel reservation
- Allow guests obtain information about hotel and room

- Allow guests to view room availability before booking
- Deliver confirmation messages for room booking

Administration module

- Allow authorized users to view hotel database information
- Allow authorized users to make analysis base on database information
- Allow authorized users to view and generate reports
- Allow authorized users to customize reports

General information module

- Display information on the hotel, such as facilities offered, packages, accommodation, etc.

3.4.2 Nonfunctional Requirement

a. Robustness

Robustness refers to the ability of the system to continue operation despite encounter unexpected problems. This system should be able to precede unanticipated errors by having validation for the input field on the client side before it is sent to the server .Similarly, validation must also be performed on the server side so that systematic errors do not occur.

b. Usability

Usability can be achieved when visitors have a pleasant experience when they visit the site. An appropriate user interface and documentations will be incorporated into the site to unsure a high level of usability .Besides that ,user menu , prompt response ,easy to

understand interfaces and hassle free reservation also will help to achieve the desired usability level .

c. Correctness

Performance evaluation is the main concern to achieve the desired level of correctness .The system ability to fulfill customers' needs and the administrator objectives at the same time crucial. This system hopes to achieve correctness by carrying out adequate researches on related fields, careful planning and implementation, proper coding techniques and a thorough system testing .

d. Speed

Speed is important to provide an efficient system.Transactions should be successfully completed within 30 seconds or produce a response within that period of time. A proper balance in the load between the server and client should be done to avoid unnecessary interaction, which will increase response time .

e. Learnability

The operating skills for this system should be easy to learn .User should be able to proficient in using the system within 2 days of training .In addition, it should be easy for visitors to understand the site so that optimum utilization of the site can be achieved.

f. Interoperability

This system should be able to interact successfully with the other available system .It

common tools, technologies and web languages .Interoperability problems are aimed to be kept at its minimum .

g. Reliability

Reliability of the system indicates that the system should set out an acceptable failure rate, which means that the system should be recoverable within a 24 hours time span.While the system is in the downtime, the operation should be recorded manually in order to update the database after downtime.

3.5 Feasibility Studies

The feasibility study is used to determine if the project should get the go-ahead. This system helped hotelier to open a new market by putting their hotel information in the Internet, besides to run their business dynamically/interactively and allowed them take decisions more quickly.

The system has provided a user-friendly interface and followed general interface guidelines for web based clients so that they are easy to use and manage.

The system provides the following benefits:

- Automated various business processes like booking rooms, view room rates, sending confirmation, managing customers
- Smooth and secure transactions between the client and its customers
- Generating various analysis/what-if reports for quick decision making

3.6 System Requirements

This section will describe the summary of software and hardware used to develop and generate the system beside explain the reason behind each selection decided.

3.6.1 Software

3.6.1.1 Server Software Requirement

Table 3.1: Server Software Requirement

Operating system	Microsoft Windows 2000 Advanced Server
Web Technology	ASP.NET
Web Server	Internet Information Server 5
Web Application Language	HTML
Database Management System	Microsoft SQL Server 2000
Web Application Development Tools	Microsoft Visual Studio.NET
Preferred Web Browser	Internet Explorer

3.6.1.2 Client Software Requirement

The client software requirement falls on the browser used by users. This project prefer web browser Internet Explorer 4.0 and above or any other browser that support ActiveX and VBScript.

3.6.2 Hardware

3.6.2.1 Server Hardware Requirement

The minimum hardware specification corresponding to this project :

Table 3.2: Server hardware requirement

Computer Processor	At least 166 MHz
Hard Disk Space	At least 2Giga Byte of free disk space
Memory	At least 64MB RAM of memory

3.6.2.2 Client Hardware Requirement

The client hardware requirements are quite minimal as long as it has a reasonable amount of RAM and a reasonable quality dial-up connection line. The recommended configuration are :

Table 3.3: Client hardware requirement

Memory	At least 32 MB memory
Dial up connection	Network connection through existing network configuration or modem

3.7 System Design

This section will explain the system design of this project. The process design will be illustrated through Structure Chart and Data Flow Diagram (DFD). Besides that, the database design, the layout design and the user interface design also included in this section.

3.7.1 Process Design

3.7.1.1 System Structure Chart

Structure chart is a recommended tool for designing a modular, top-down system. A structure chart is simply a diagram consisting of rectangular boxes, which represent the modules, and connecting arrows.

The system structure chart is used to depict high level of specified system and describe the interaction between independent modules of system major function from the initial component part of the structure chart, that broken into several subcomponents. In this project, there are two main modules which are online reservation and administration.

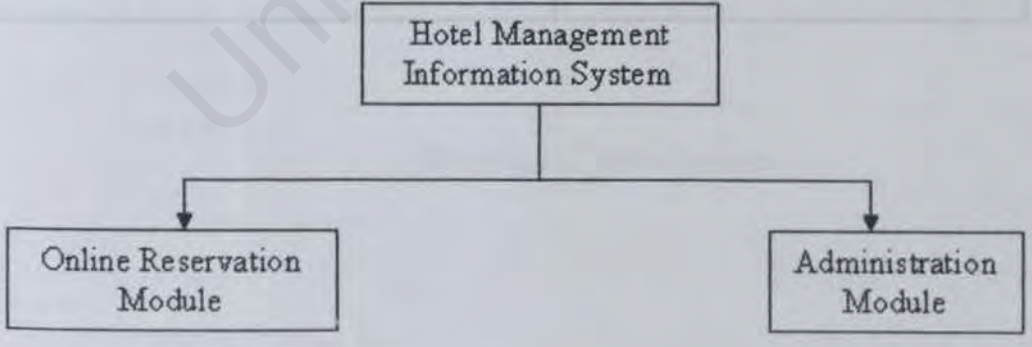

Figure 3.2: Structure Chart for Hotel Management Information System –Main System

The Data Flow Diagram is divided into three parts, which are the Context Diagram ,Diagram 0, and the Child Diagram .It is to be mentioned here that certain process are not expanded to its respected Child Diagram because the necessary data flow in Diagram 0 are adequately depicted.

Table 3.4: Conventions Used in Data Flow Diagram

Symbols	Meaning
	Entity
	Flow of Data
	Process
	Data Store

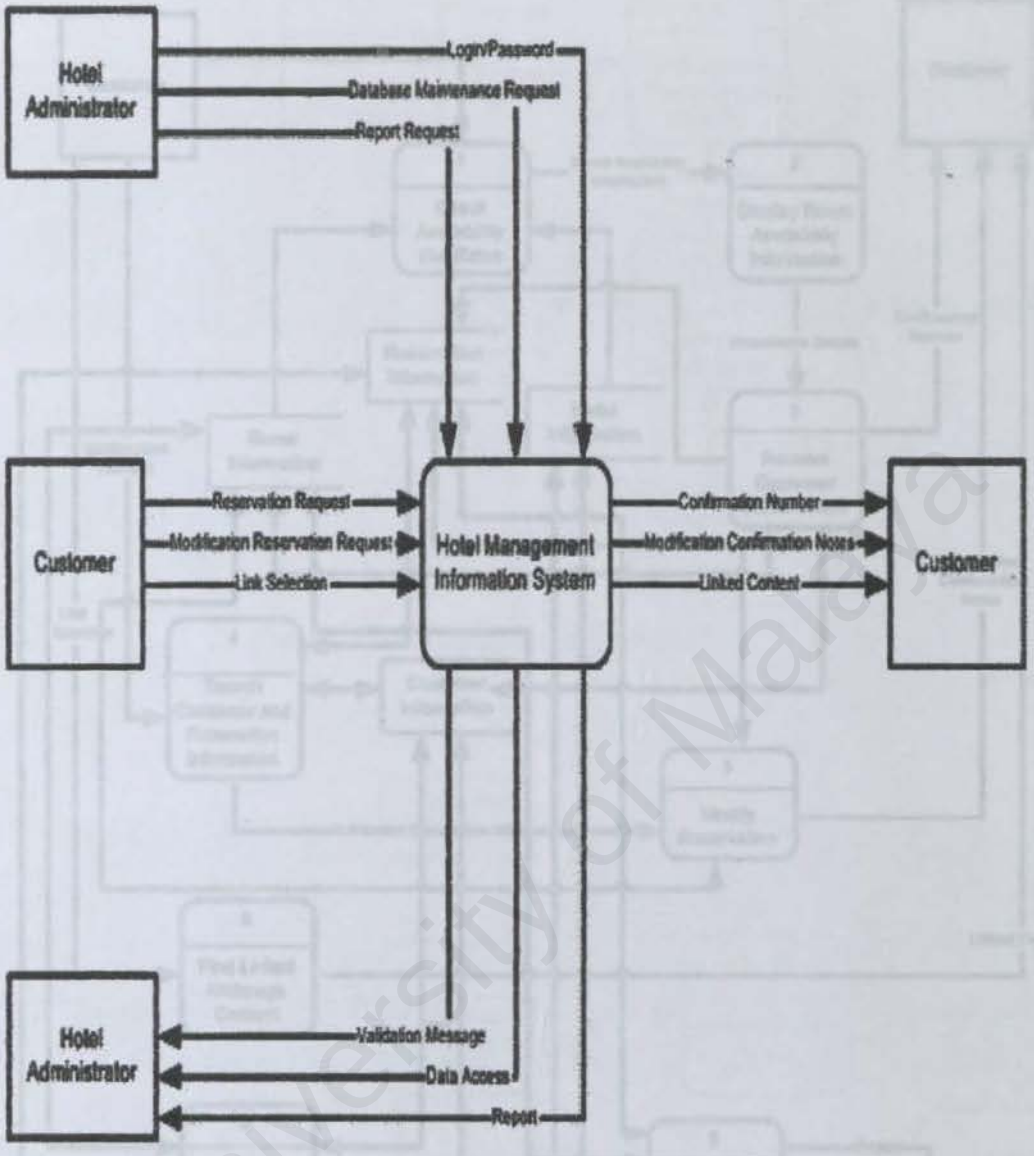

Figure 3.5: Context Diagram

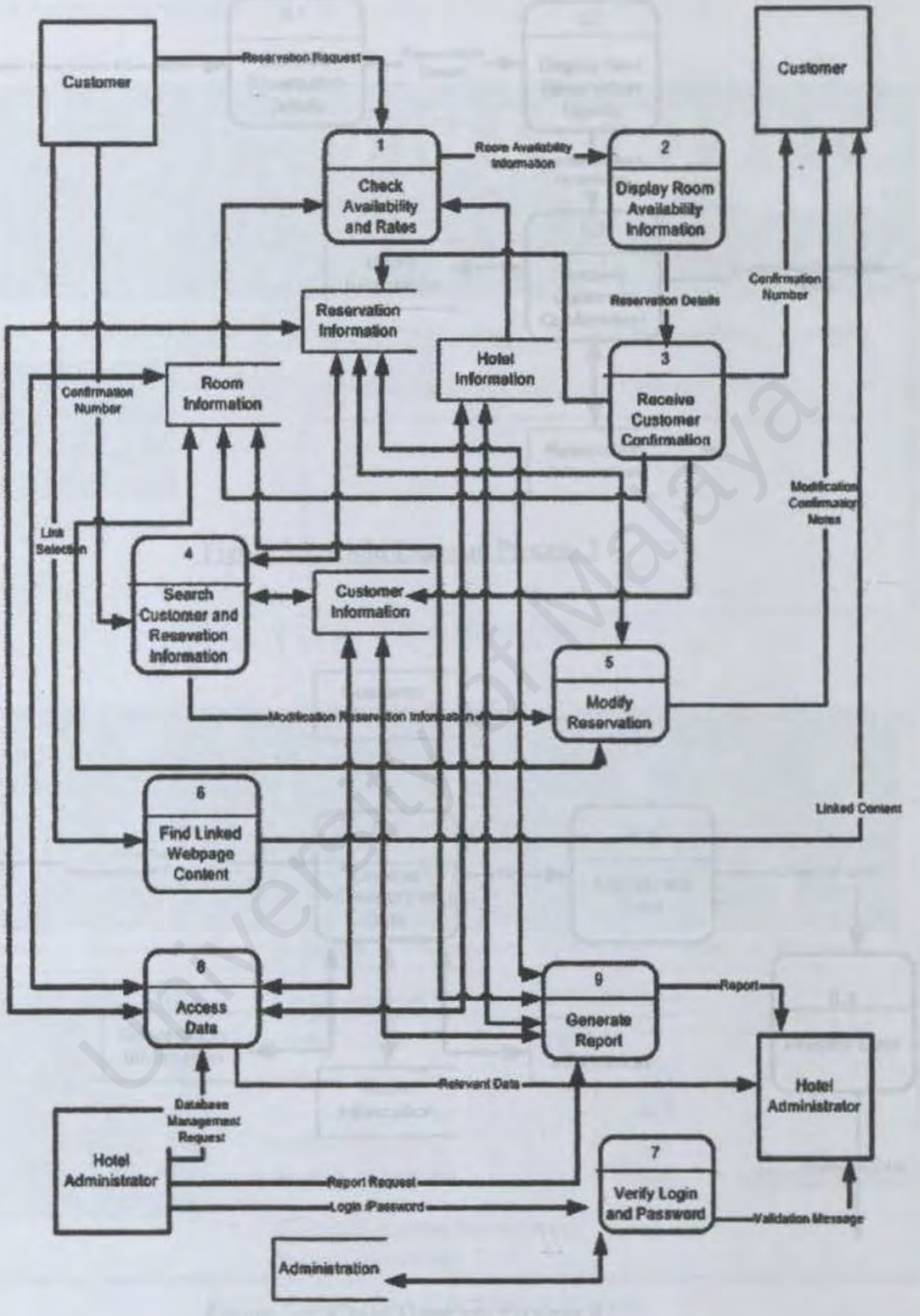

Figure 3.6: Diagram 0

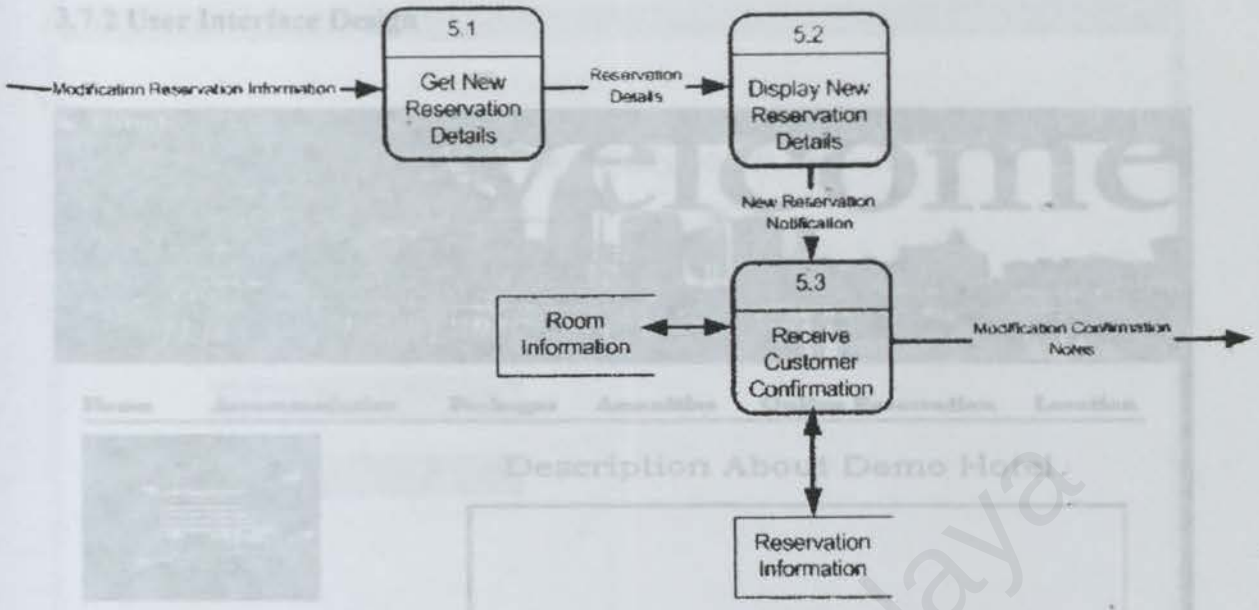

Figure 3.7: Child Diagram Process 5

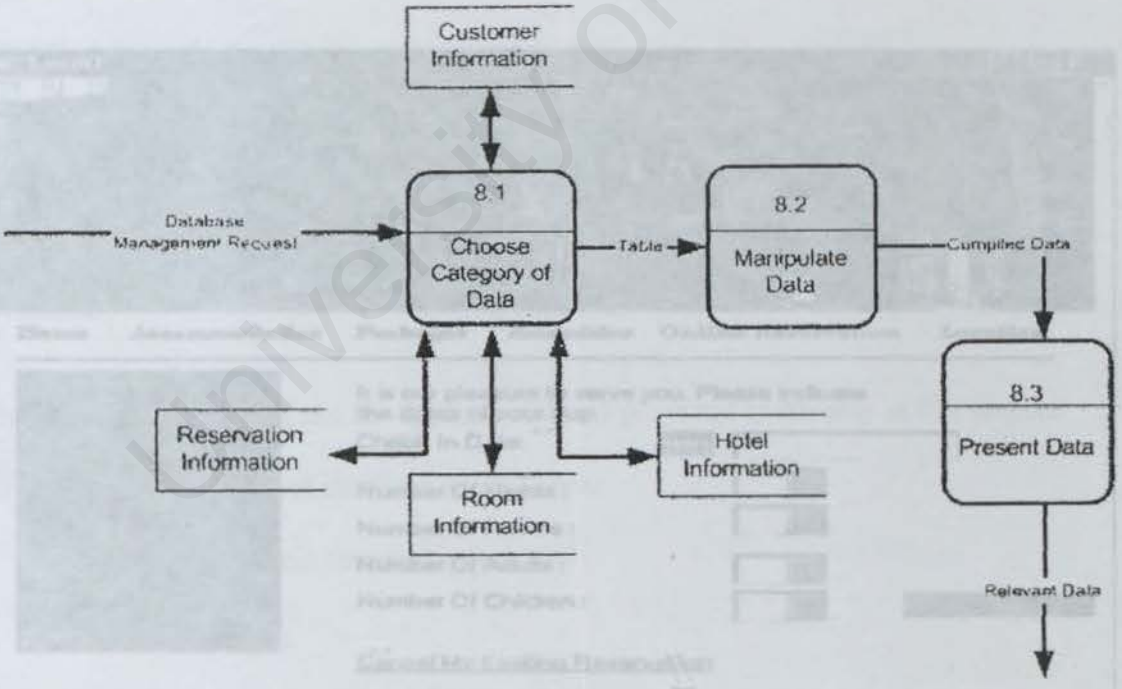

Figure 3.8: Child Diagram Process 8

3.7.2 User Interface Design

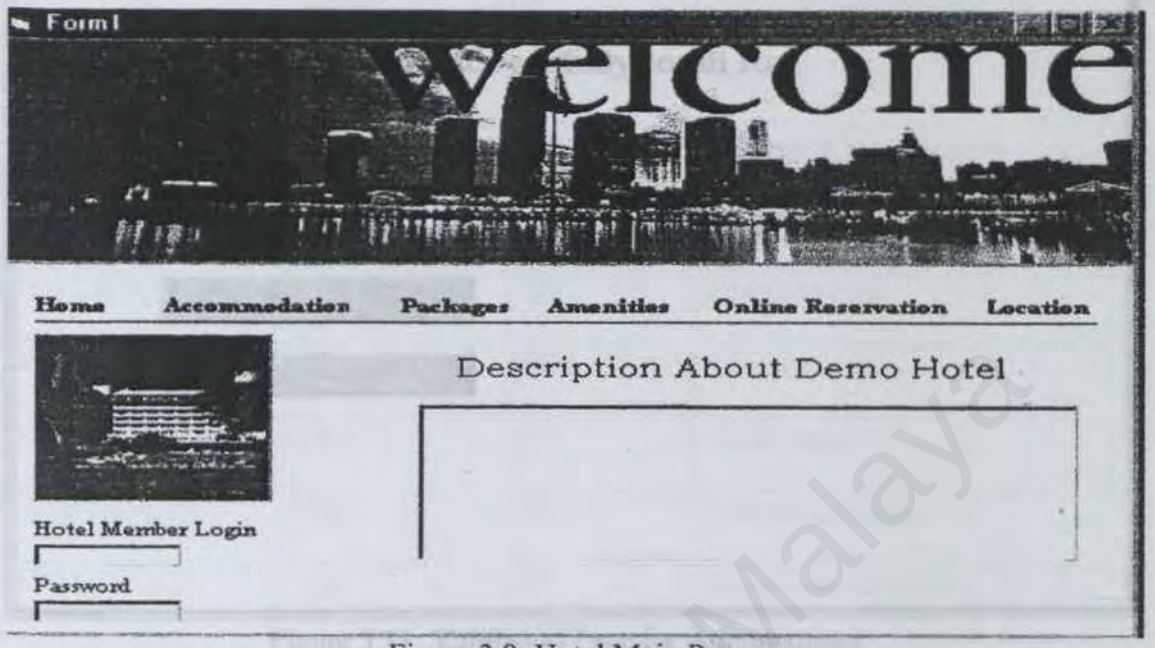

Figure 3.9: Hotel Main Page

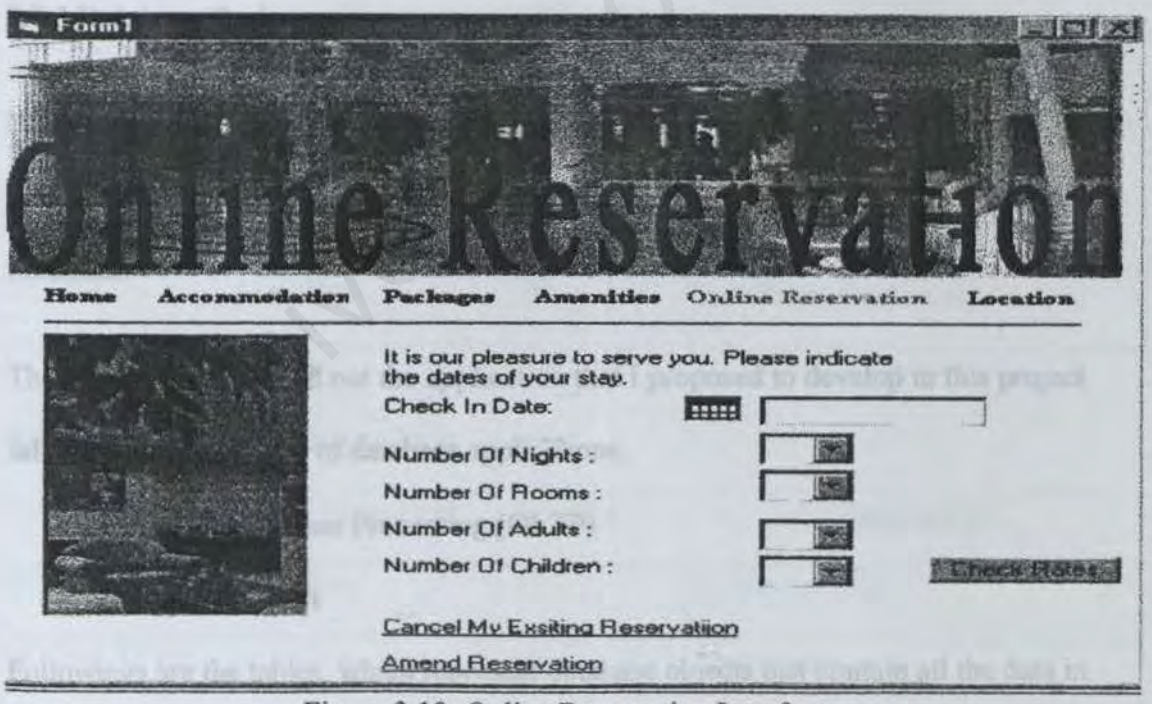

Figure 3.10: Online Reservation Interface

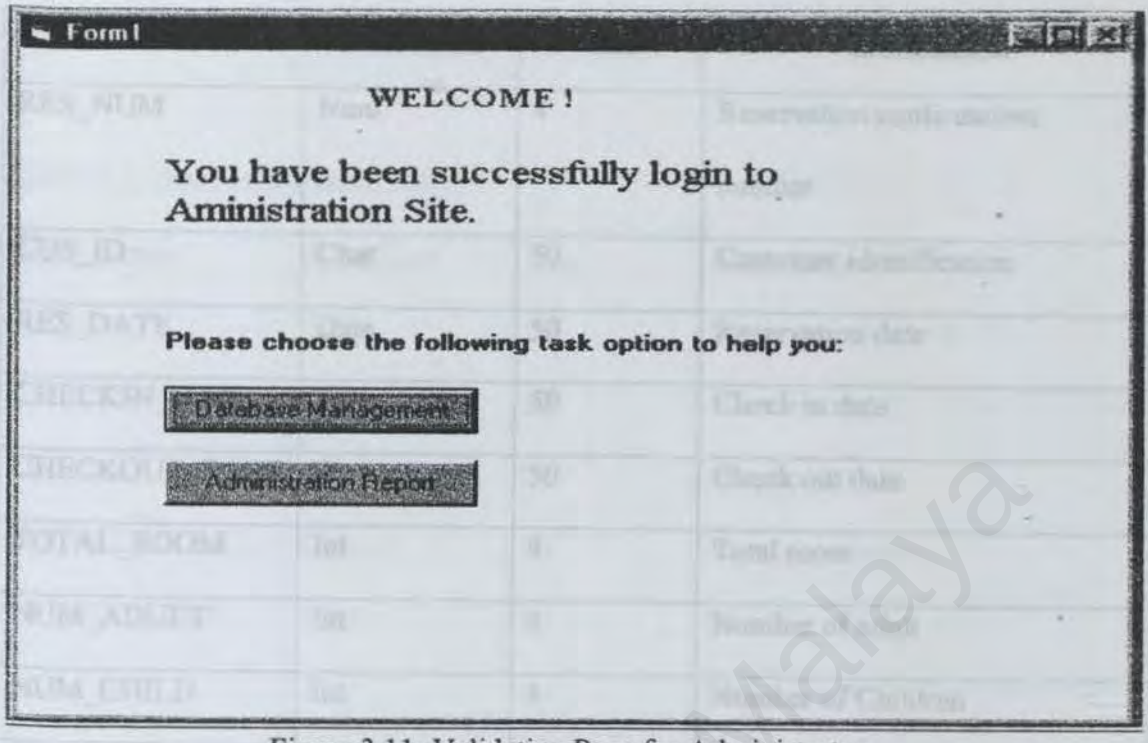

Figure 3.11: Validation Page for Administrator

3.7.3 Database Design

Designing a database requires an understanding of both the business functions that want to be modeled and the database concepts and features used to represent those business functions.

Therefore, I have figured out the application that I proposed to develop in this project falls into two categories of database applications:

- Online Transaction Processing (OLTP)
- Decision Support

Followings are the tables, which represent database objects that contain all the data in the database:

Table 3.5: Reservation Information Table

Field Name	Data Type	Size	Description
RES_NUM	Num	4	Reservation confirmation number
CUS_ID	Char	50	Customer identification
RES_DATE	Date	50	Reservation date
CHECKIN_DATE	Date	50	Check in date
CHECKOUT_DATE	Date	50	Check out date
TOTAL_ROOM	Int	4	Total room
NUM_ADULT	Int	4	Number of adult
NUM_CHILD	Int	4	Number of Children
ROOM_TYPE	Char	50	Room Type
ROOM_PRE	Char	50	Room Preferences
RES_STATUS	Char	50	Status of reservation
CC_NUM	Num	4	Credit card number
CC_NAME	Char	50	Credit card's holder name
CC_EX	Date	50	Credit card expiry date

Table 3.6: Room Information Table

Field Name	Data Type	Size	Description
ROOM_NUM	Num	4	Room number
ROOM_TYPE	Char	50	Room type
ROOM_RATE	Char	50	Room rate
ROOM_DESC	Char	50	Description of room

ROOM_STATUS	Char	50	Status of room

Table 3.7: Hotel Information Table

Field Name	Data Type	Size	Description
HO_ID	Char	50	Hotel identification
HO_NAME	Char	50	Hotel name
HO_ADD	Char	50	Hotel address
HO_DESC	Char	50	Hotel description
HO_LOCATION	Char	50	Hotel location

Table 3.8: Customer Information Table

Field Name	Data Type	Size	Description
CUS_ID	Char	50	Customer identification
CUS_NAME	Char	50	Customer name
CUS_RACE	Char	50	Customer race
CUS_AGE	Int	4	Customer age
CUS_ICNUM	Num	4	Customer IC number
CUS_GEN	Char	50	Customer gender
CUS_NAT	Char	50	Customer nationality
CUS_ADD	Char	50	Current address
CITY	Char	50	Current city
STATE	Char	50	Current state
POSTCODE	Num	4	Current postcode

COUNTRY	Char	50	Country
CUS_EADD	Char	50	Email address
CUS_TEL	Num	4	Current telephone number
CUS_HTEL	Num	4	Current mobile phone number
CC_NUM	Num	4	Credit card number
RES_NUM	Num	4	Reservation confirmation number

Table 3.9: administration Table

Field Name	Data Type	Size	Description
AD_ID	Char	4	Administrator identification
AD_LOGIN	Char	50	Administrator login name
AD_PW	Char	50	Administrator password

Table 3.10: Credit Card Information Table

Field Name	Data Type	Size	Description
CC_NUM	Num	4	Credit card number
CC_EX	Date	50	Credit card expiry date
CC_NAME	Char	50	Credit card's holder name
CC_TYPE	Char	50	Credit card type

3.8 Statement of Expected Outcome

The expectations of the project outcome would be a web application of Hotel Management Information System with target users include guests and staffs of the hotel. This system expected to enable online hotel reservation to all Internet users and enable hotel administrator to achieve hotel's database and perform analysis on the data stored. This function can help them to decide hotel's future marketing strategy and attract customer attention by knowing their preferences.

Chapter Four System Implementation

4.0 Introduction

System implementation is a process that carries out the suggested procedures so that a complete system will be produced at the end of it. System implementation does this by converting the system requirements and design into program codes. This phase involves some review to the previous design. This chapter describes the implementation methods used for the system. Focus will be given to the development environment, development tools and the development of the various modules in the system. Considerable explanation will also be given to the methods, styles and coding techniques used in the implementation of this system.

4.1 System Implementation

The design must be translated into the form that can be understood by the machine. The code generation step performs this task. Hotel Management Information System is accomplished with the well and detailed design and coding. System implementation consists of the following five steps.

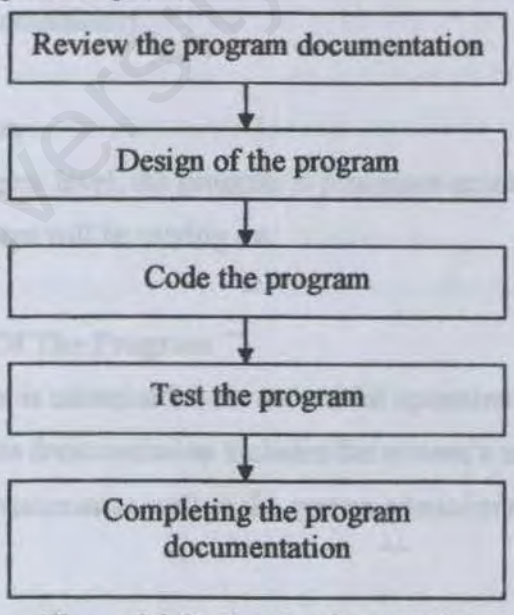

Figure 4.1:System Implementation

4.2 System Implementation Process

4.2.1 Review The Program Documentation

Review the program documentation that was prepared during the previous phases. The program documentation consists of simple process flow, data dictionary entries and the source documentation. This documentation enable me to understand better o the work that need to be covered during the coding process.

4.2.2 Design The Program

After the program documentation review, the second level, program design, needs to be completed during the system implementation. For this level, exactly what the program can accomplish decided. This is the process of developing a logical solution to the programming problem. The logical solution or logic for a program is a step-by-step solution to a programming problem.

4.2.3 Code The Program

Coding the program is a process of writing the program instruction that implements the program design. Design specification must be translated to machine-readable format. The coding steps perform this task. If design is performed in detailed manner, coding can be accomplished mechanically.

4.2.4 Test The Program

During the testing program level, the program is processes actual data and produces information on which user will be relying on.

4.2.5 Documentation Of The Program

Completing the program is essential for the successful operation and maintenance of the information system. This documentation includes the system's user manual that may be needed by most of the customer as well as the system administrator.

4.3 Program Coding

During this phase, the programs are written and user interfaces of Hotel Management Information System are developed and database is initialized with data. The design must

be translated into a machine-readable form. The coding step performs this task. During coding, the components built during development are put into operational use. The system is built according to the original design that was done.

4.3.1 Coding Approach

A program technique called top-down, stepwise refinement has been utilized in this system; this is an approach that essential to the development of well –structured program. This approach was adapted due to the dependency of the function to login in Administration module. Coding performs task, which translates design into a machine-readable form. If the design performed in a detailed manner, code generation can be accomplished in a detailed manner and can be completed mechanistically.

4.3.2 Coding Style

Coding style is an important attribute of source code and it determines the intelligibility of a program. An easy to read source code makes the system easier to maintain and enhance. The element of coding style includes internal (source code level) documentation, method of data declaration and approach to statement construction. The following lists some of the styles used during coding styles.

a. Code each variable so that it corresponds as closely as possible to a verbal description of the substantive hypothesis the variable will be used to test.
b. Use a consistent style regarding lower and upper case letters
c. Use variable names that have substantive meaning.
d. Use appropriate white space in program in a consistent fashion that marks them easy to read.
e. Include comments before each block of code describing the purpose of the code.
f. Include comments for any line of code if the meaning of the line will not unambiguous.

4.3.3 Coding Documentation

Coding documentation begins with the selection of identifier, names, continues with the composition of connectivity and end with the organization of the program. Blank line or indentation was used so that comment can be readily distinguished from code.

a. Internal Document

The internal document contains information directed at someone who will be reading the source code of the program. It is important for a clearer understanding. Internal comment provides a clear during the maintenance phase of the system. Comments also provide the developer with means of communication with readers of the source code. Statement of purposes indicating the function of the module and descriptive comment that is embedded within the body of the source code is needed to describe processing function.

b. Naming Convention

Naming convention provides easy identification for the programmer. The naming convention is created with coding consistency and standardization in mind.

c. Modularity

In order to reduce complexity, facilitate changes result in easier implementation by encouraging parallel development of different part of a system. It is measured using two qualitative criteria – cohesion and coupling. Software with effective modularity is easier to develop because function may be compartmentalized and interfaces are simplified. Independent modules are easier to maintain because secondary effects caused by design or code modification are limited, error propagation is reduced, and reusable modules are possible.

4.4 Database Connection

The .NET Framework includes a new data access technology named ADO.NET, an evolutionary improvement to ADO. ADO.NET provides consistent access to data sources such as Microsoft SQL Server, as well as data sources exposed via OLE DB and XML. ADO.NET includes .NET data providers for connecting to a database, executing commands, and retrieving results. Those results are either processed directly, or placed in an ADO.NET DataSet object in order to be exposed to the user in an ad-hoc manner, combined with data from multiple sources, or remoted between tiers. The ADO.NET

DataSet object can also be used independently of a .NET data provider to manage data local to the application or sourced from XML.To make a remark, the database has been modified so that the data retrieval performance can be further enhanced and following are the database design for Hotel Management Information System after modification.

Column Name	Data Type	Length
AD_ID	Int	4
AD_LOGIN	Varchar	50
AD_PW	varchar	50

Table 4.1 Administration Table

Column Name	Data Type	Length
Cus_ID	Int	4
FirstName	Varchar	50
LastName	Varchar	50
Age	Varchar	50
Email	Varchar	50
Tel	Varchar	50
Address	Varchar	50
ZipCode	Varchar	50
City	Varchar	50
State	Varchar	50
Country	Varchar	50
CCHolderName	Varchar	50
CCNumber	Varchar	50
CCExpDate	Varchar	50
CCID	Int	4
RoomReservationID	Int	4

Table 4.2 Customer Information Table

Column Name	Data Type	Length
RoomReservationID	Int	4
RoomID	Int	4
PackageID	Int	4
ArrivalDate	Datetime	8
DepartureDate	Datetime	8
NumberOfRoom	Int	4
NumberOfAdult	Int	4
NumberOfChildren	Int	4
NumberOfPackage	Int	4

Table 4.3 Room Reservations Table

Column Name	Data Type	Length
RoomID	Int	4
RoomName	Varchar	50

Table 4.4 Room Information Table

Column Name	Data Type	Length
PackageID	Int	4
PackageName	Varchar	50

Table 4.5 Pakcage Information Table

Column Name	Data Type	Length
MessageID	int	4
MessageTitle	Varchar	50
MessageText	Text	16

Table 4.6 Messages Table

4.5 Web Page Coding

The required coding implementation was done using ASP.NET. ASP.NET is a platform — including design-time objects and controls and a run-time execution context — for developing and running applications on a Web server.ASP.NET in turn is part of the .NET Framework, so that it provides access to all of the features of that framework.

Creating ASP.NET Web applications involves working with many elements used in client-server application. These include:

- **Project management features** When creating an ASP.NET Web application, to keep track of the files needed, which ones need to be compiled, and which need to be deployed.
- **User interface** Application typically presents information to users; in an ASP.NET Web application, the user interface is presented in Web Forms pages, which send output to a browser.
- **Data** Same with most applications, this system requires some form of data access. In ASP.NET Web applications, ADO.NET was used, the data services that are part of the .NET Framework.
- **Security, performance, and other infrastructure features** As in any application, security was needed to prevent unauthorized use, test and debug the application, tune its performance, and perform other tasks not directly related to the application's primary function.

Advantages of using ASP.NET can be seen where the entire .NET Framework is available to any ASP.NET application. Developers can easily access the benefits of these technologies, which include the managed common language runtime environment, type safety, inheritance, and so on.

ASP.NET has been designed to work seamlessly with WYSIWYG HTML editors and other programming tools, including Microsoft Visual Studio .NET. Not only does this make Web development easier, but it also provides all the benefits that these tools have

to offer, including a GUI that developers can use to drop server controls onto a Web page and fully integrated debugging support.

Following is an example of ASP.NET coding which was used to generate a Crystal Report when user enter a date:

```
Private Sub Page_Load(ByVal sender As System.Object, ByVal e As
System.EventArgs) Handles MyBase.Load

'verifies the visitor has logged in

        If Session("AD_ID") Is Nothing Then
            Response.Redirect("./AdminLogin.aspx")
        End If

Dim connectionString As String = ""

'Enter the log on information for your database

connectionString = "Provider=SQLOLEDB.1;Integrated
Security=SSPI;Persist Security Info=False;User ID=mokheifung;Initial
Catalog=HotelDB;Data Source=mok;Workstation
ID=MOK;Trusted_Connection=Yes"

'Create and open a connection using the connection string

 adoOleDbConnection = New OleDbConnection(connectionString)

'Build a SQL statement to query the datasource

Dim sqlString As String = ""
sqlString = "SELECT * FROM RoomReservations"

'Retrieve the data using the SQL statement

adoOleDbDataAdapter = New
OleDbDataAdapter(sqlString,adoOleDbConnection)
```

```
'Create a instance of a Dataset
DSRR = New DataSet()

'Fill the dataset with the data with RoomReservation information.
'The table name used in the Fill method must be identical to the name
'of the table in the report.
adoOleDbDataAdapter.Fill(DSRR, "RoomReservations")

'Pass the dataset to the report
myReport.Database.Tables(0).SetDataSource(DSRR)
        If chkUseDates.Checked Then
            CrystalReportViewer1.Visible = True
Dim DateRange As String

'Receive parameter from user entry
DateRange = "{RoomReservations.ArrivalDate} IN #" & txtStartDate.Text &
"# TO #" & txtEndDate.Text & "#"

            CrystalReportViewer1.SelectionFormula = DateRange
            CrystalReportViewer1.ReportSource = myReport

        End If

End Sub
```

4. 6 Implementation of The System

This section will discuss on the major modules of the system. It is to take note that these major modules comprise of many smaller but equally important in terms of

functionality. The module that will be discussed here is the Online Reservation module and the Administration module.

4.6.1 Online Reservation Module

There are two kind of online reservations can be made by using this system, the first one is reservation after choosing the room type preferred and the second one is reservation after choosing the package type intended to reserve.

For both, the procedures of reservation are the same except the first part where customer browse through the site to decide whether they are interested in booking the package or just the room alone. After decided which type they prefer, they have to enter the arrival date and departure date and check the availability. Availability check is done through a background process that occurs without the knowledge of the customer. If the room or package is available, customer will be lead to a page where customer is required to fill in the form before a reservation number is given.

The database design is essential in this module. Database was designed in a way that allows efficient retrieval of information. The database size is kept at its minimum level to avoid huge time lag when customer perform availability checks.

Visual Studio.Net was used to complete this module. Following figures show the deployment of the development tool:

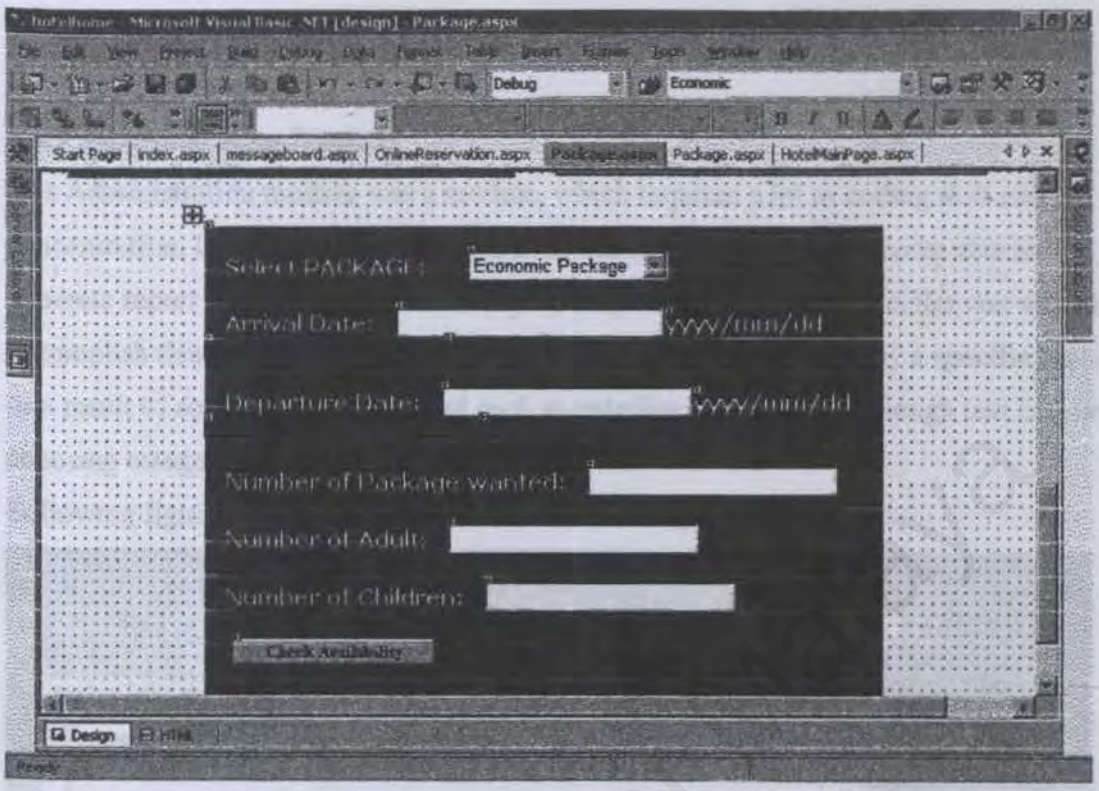

Figure 4.2 Development of Online Reservation Module (Design View).

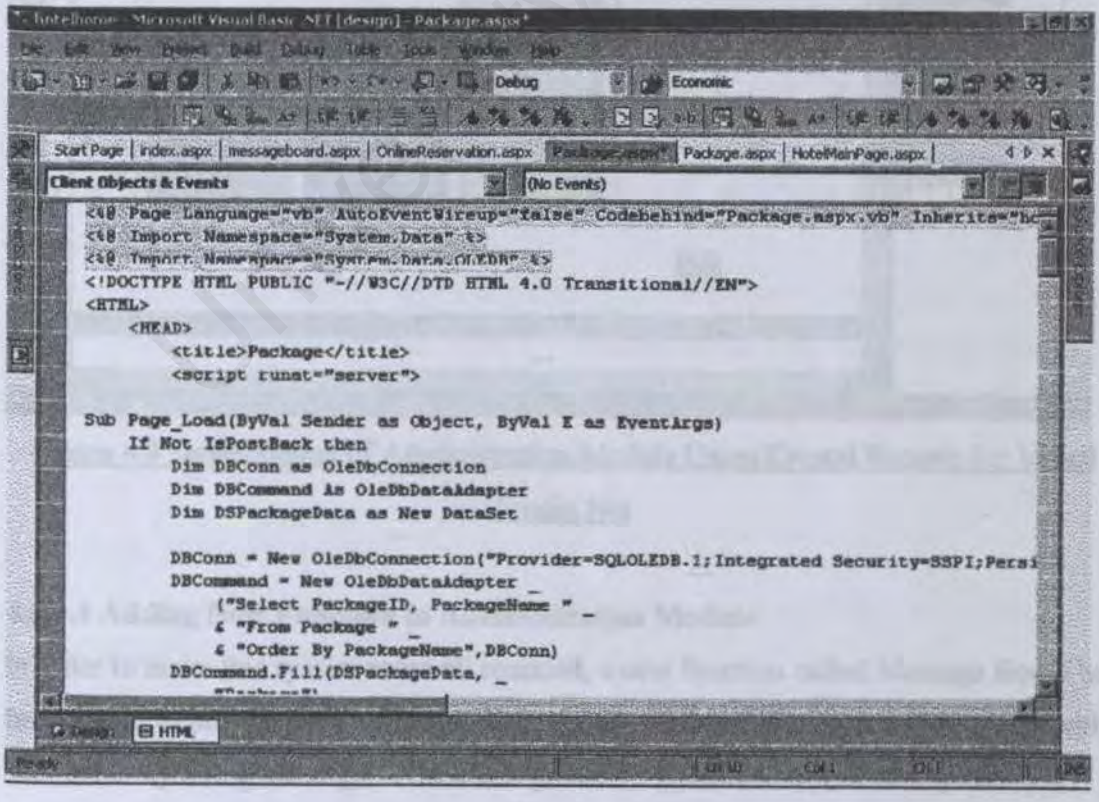

Figure 4.3 Development of Online Reservation Module (HTML View)

4.6.2 Administration Module

The Administration module was a module, which requires a lot of coding skill and concentration. Due to the functional requirement for this module was to be able to generate report in run time, therefore Crystal Reports for Visual Studio.Net was used to accomplish this task. This application bound at runtime so as to display a specific report as a result of some user-driven event such as entering some criteria through text box or choosing category from a dropdown box.

Following figures show the deployment of the development tool:

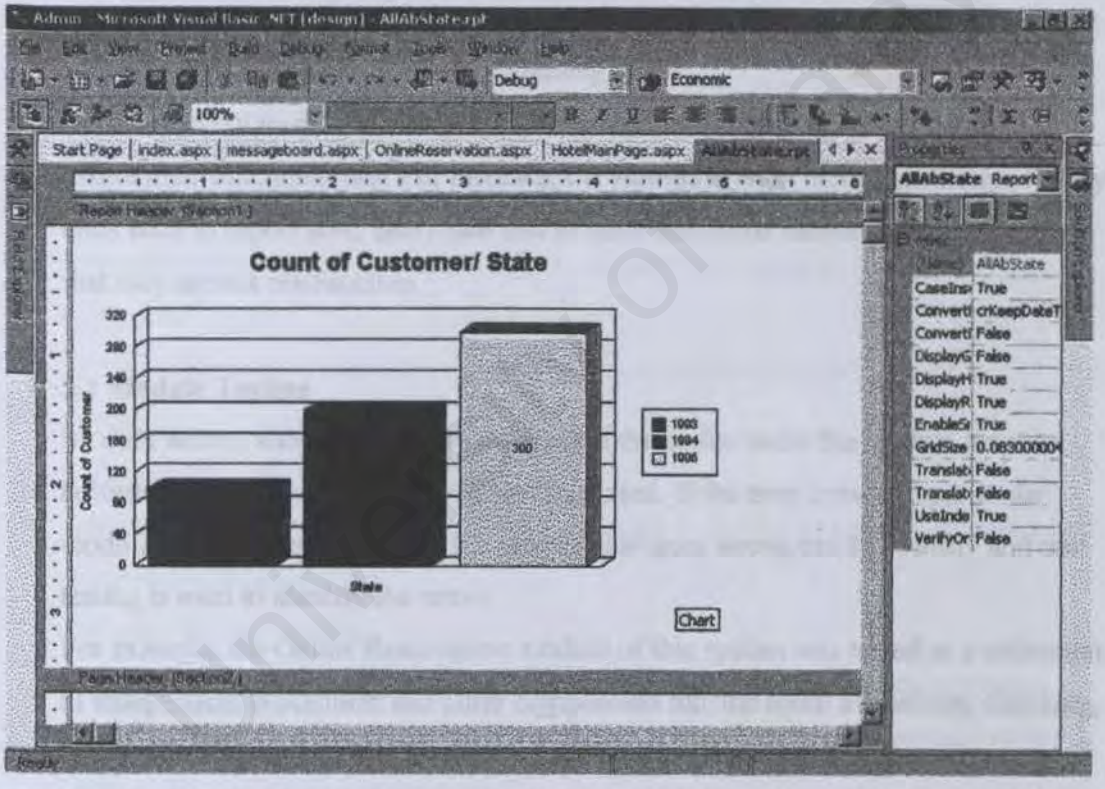

Figure 4.4 Development of Administration Module Using Crystal Reports for Visual Studio.Net

4.6.2.1 Adding New Function In Administration Module

In order to make this system more all rounded, a new function called Message Board has been added to this module, this function is to enable administrator to communicate with each other by living message in the message board. Administrator of this system as

Chapter Five System Testing

5.0 Introduction

System testing is a process to ensure entire application running smoothly by testing the integrated system and verify whether the system meets the specified requirements.

Each module and function in the system has been individually tested before being integrated together to for the entire system. Therefore, this Hotel Management Information System has undergone several level of testing before it was established.

5.1 Unit Testing

Unit testing is a process used to verify that software code performs adequately and correctly implements the system design. Unit testing is to ensure that the stand-alone program fixes the bug without side effecting.

Each and every module in the Hotel Management Information System is tested to assure their functionalities. For instance, the Administration module consists of many units such as report unit; query unit and so forth are tested individually to make sure that they are not malfunction.

5.2 Module Testing

Module testing was carried out to ensure that the codes under the module function accordingly when all units of code are integrated. If the error exist in a particular module, then the related part of the module that goes wrong can be identify and unit testing is used to identify the errors.

For example, the Online Reservation module of this system was tested as a collection of independent procedures and other components like the room availability checking, all other different units, which made up this module were tested as a whole to make sure that it could successfully enable user to make reservation with hassle free.

5.3 Integration Testing

Integration testing is a process of verifying that the system modules work together as described in the system and program design specifications.

Once the information is passed among components in accordance with the design, testing of the system to assure that it has desired functionality was undertaken.

5.4 System Testing

As mentioned above, system testing aims to uncover faults that may exist, there are several steps in testing a system.

5.41 Function Testing

System testing begins with function testing where as previous testing concentrated on components and their interactions, this step ignores system structures and focuses on functionality of the system.

5.42 Performance Testing

It is designed to test the runtime performance of the system. It occurs through all the steps in the testing process.

a. Stress Testing

Stress testing determines whether program fulfilled the requirements designed for it and makes sure program works even under extreme condition.

b. Security Testing

Security testing verifies protection mechanism or the system against improper penetration.

c. Timing Testing

Timing testing evaluates the requirements dealing with time to respond to a user and time to perform a function.

d. Human Factor Testing

Investigation required dealing with user interfaces of the system. Display screens, messages, report formats and other aspect that may relate to ease of use had been done.

5.43 Acceptance Testing

Acceptance testing is a stage of testing whereby the Hotel Management Information System is tested before being accepted by the user for operational use.

At this stage, the functionalities of the system are demonstrated to the users and users may have hands on experience with the actual system.

Acceptance testing helps reveal the existing requirement problems, when the functions provided by the system do not really meet the user's need or requirements. Generally, user found this system very user friendly and easy to use. Users found the room reservation procedure easy to accomplish and the user interface are striking and thus arouse the user's interest to continue viewing the entire website.

On the other hand, users found the Administration module can help hotelier access the essential information about the hotel with ease. Many users express their interest in the generate report function because this function enable user to enter their criteria and the results was generated and runtime which means the results are most up to date.

However, nothing is perfect in this world, some users suggest the reservation should not be limited to those that own a credit card. As conclusion, users are satisfied with the Hotel Management Information System.

5.44 Installation Testing

The final round of testing involves installing the system at user sites. To begin installation testing, configure the system to the user environment is needed. Though this system is not configure in a real hotel site, I assume this installation testing was carried out during configure this system at faculty. This test focuses on two factors: completeness of the installed system and verification of any functional or nonfunctional that may be affected by site conditions.

5.5 Summary

This chapter explains the details of various testing stages, techniques and method used to test the system. This system accomplished five stages of testing and users are contented with the system and complimented on the efficient modules and functions as well as the attractive user interface of the system. However, suggestions from users also taken into consideration to improve this system to meet the user's need in future.

Chapter Six System Evaluation

6.0 Introduction

System evaluation is the process of identifying a system's strengths and limitations, thus, allowing illustration of possible enhancement of the system in future. Therefore, this chapter is aimed at identify the various problems stand in the way during the implementation of the system and to evaluate the system as a whole.

6.1 Problems Encountered

6.11 Difficult to Debug

ASP.Net can be considered a rather new technology therefore some bugs will appear during the system implementation. Some of the bugs required service pack to be downloaded to debug, and surfing the Internet to find for solution for the bugs was a common chores during the system implementation. Most of the time has spent on these chores. Even so, cannot be denied, ASP.Net still a powerful tool and many valuable features still wait to be explored.

6.12 Time Constraint

Time constraint was an obvious problem when developing this system. This is due to in a few months time, the tasks of system design, implementation, testing has to be accomplished. Furthermore, the development tool and language were new to me.

6.2 System Strengths

6.2.1 User Friendliness

In this system, careful designing concepts had been put into designing the interface in order to promote user friendliness. The simple but informative design and self explanatory navigation links make room reservations and web surfing a breeze. The color palettes used to design the interface was chosen carefully in order to make the web pages more intelligible and pleasant to the eyes.

6.2.2 Accurate and Timely Reports

The Check Availability function enables the web site visitors to get up to date information on the available rooms to provide smooth reservation transactions. This

function gives visitors the freedom to choose their check in and check out dates, the number of rooms as well as their choices of rooms and packages.

The Administrator module on the other hand, provides ways for the hotelier to actively query and generate most up to date reports with the real time generate report function With the useful information on hand, hotelier able to make good decision on their business strategy planning.

6.2.3 Availability and Convenience

As a web based applications, this system is available to users 24 hours a day, 7 days a week. The availability guaranteed unless there are technical problem such as server down. As long as the intended users have access the Internet, the system is available to all the users around the globe with no national boundaries.

Information such as the facilities available, room types, packages and rates, the conditions applied and the general information of the hotel can be accessed with a few click away. Simplified room reservation function enable user make a reservation hassle free without wasting time, traveling and making phone calls.

Hotelier benefit from the availability and convenience of this web based system where they can access to the various data and information anytime, anywhere and reports and statistics can be generated instantly.

6.2.4 Database and Information Security

As this system is a web based application, considerable attention has been given to the security of data and the privacy of the web visitors. To achieve this objective, the Login with password function was triggered to protect data from unauthorized achieve.

6.3 System Limitations

6.3.1 No Electric Payment Method

Although all the visitors that wish to make room bookings must own a credit card, there are no further methods that allow the payment to be automatically debited from the credit card. However, this system has taken the first step to enable future payment enhancement to be implemented. The step taken refers to the automatic payment calculation that appears when the visitor fills in the form to make room reservation. The total payment for the reserved rooms is shown in the form itself.

The unavailability of the electronic payment is a drawback especially when web based applications are concerned.

6.4 Future Enhancements

6.4.1 Electric Payment Method

Afflictions can be set up with credit card companies or established banks to enable payment via electronic means. This could include automatic debit of payments from the guests' credit card or bank account.

However, security issues are important criterion when electronic payment methods are concerned. A secured and safe system must be created to guarantee hotel guests of their privacy and to earn the guests 'confidence. Guests must feel secured with the payment system before they are willing to make room reservation online.

6.4.2 Further Improve System Security

Though the system was protected by login function, the security of the Administration section should be further enhance to protect penetration.

6.5 Knowledge and Experience Gained

Started from proposing the project title to plan, develop, implement, test, and finally evaluate the system, I had gained many valuable experience and knowledge. The entire process had given me the opportunity to further understand and learn the various web techniques, programming skills, business operational knowledge. Another skill acquired was to put the theoretical knowledge into real life situation. Throughout the development of this system, valuable knowledge and experience have been acquired. They are:

a. Chance to learn new programming language.
b. Chance to practice theoretical knowledge that learnt
c. Experienced the process of planning, designing, developing and testing a system.
d. Sharpen the skills of report writing
e. Practicing good time management, pressure handling and work indepently.

6.6 Summary

This chapter evaluates the Hotel Management Information System from different perspectives. It started by stating the problems encountered throughout the development and implementation of the system, which include the challenges learning ASP.NET.

The next section discusses the strengths and limitations of the system. Due to the nature of web-based application, the system naturally inherits the benefits of Internet. These advantages include borderless achieve with 24 hours availability and convenience. Data security and privacy of the visitors is another added strength to the system. The weaknesses of the system were due to the unavailability of electronic payment module and stronger security.

Next issue is about the suggestions on the possible future enhancements for the system. The purpose of an online web application is to increase its customer base. Thus, this will require an electronic payment system so that wider range of customer can be reached and not limited to customer possessed credit card.

Finally, the experience and valuable knowledge gained was mentioned in the final section of this chapter. Although good theoretical knowledge is needed as a start off point, knowledge sharing among friends is also needed.

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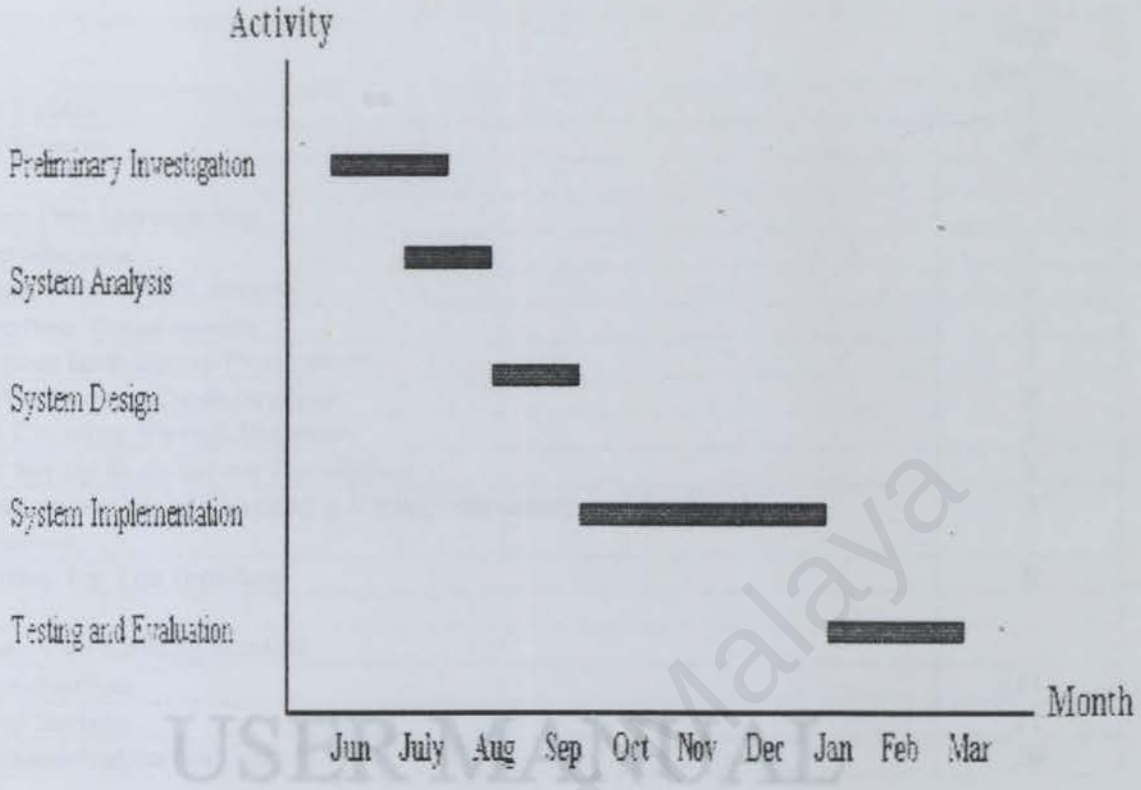
Appendix



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USER MANUAL

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User Manual

Chapter One Introduction

1.0 Introduction

This Hotel Management Information System is a web-based application, which designed to manage a room reservation through Internet from users all over the world. There are two sections in this system, function of user section as mentioned above while administrator section allow administrator to generate report at runtime. All the function in this system can easily be executed by a simple point and click on the available function buttons and links.

1.1 Objectives of The System

- ✓ Try to meet the needs of an actual commercial entity.
- ✓ Enable users to make room reservation via an online application at the convenience of their Internet access .For example, it includes an availability check function which allows visitors to check the available rooms during their intended date of stay through the site itself etc.
- ✓ Hoteliers can access two basic actions, which is the password and login requirement and manipulation of data. Administrators are able to make analysis such as tracking customer preferences from the database and generate relevant report that can be further refine quality of the hotel services. This is due to managers need summary information from which they can analyze trends that affect the hotel operation. They need to find the critical factors affecting the success of the hotel, and how best to adjust those factors to improve the success of the hotel.

1.2 Runtime Requirement

The server side software requirement needed to run this system included:

Operating system	Microsoft Windows XP / 2000 / NT
Web Server	Internet Information Server 5.0
Database Management System	Microsoft SQL Server 2000
Preferred Web Browser	Internet Explorer 5.0 or above

Table 1.1 Software Requirement

The server side minimum hardware requirement needed to run this system included:

Computer Processor	At least 133 MHz
Hard Disk Space	At least 2Giga Byte of free disk space
Required RAM	At least 128MB RAM of memory

Table 1.2 Hardware Requirement

1.3 System Installation Procedures

1.3.1 Web Server Configuration

1.3.1.1 Creating Virtual Directory

This system required Internet Information Server to act as web server. Firstly, to set up the web server, users have to create 2 virtual directories named *hotelhome* for the online reservation module, and *Admin* for administration module in the web server under the root directory *Inetpub/wwwroot.*If the project files are not stored inside the root directory, map the virtual directory to the physical directory in the server hard drive where all the project file are stored for example D:/hotelhome.

If user would like to map the virtual directory to the root directory then all the project files must be uploaded to the web server root directory.

1.3.1.2 Set Up Web Server Permissions

After the virtual directory has been created, permission must be assigned to the newly created directory. The *Read, Log Visits* and *Index this resource* permission should be checked to enable this system to running smoothly.

Besides, there is a text box near the foot of the *Properties* dialog, labelled *Execute Permissions*, this specifies what level of program execution is permitted on pages contained in this directory. For this selection, *Execute Permissions* has to be set to *Scripts Only* which means that users can also access any script-based pages, such as ASP.NET pages. So if user requests an ASP.NET pages that's contained in this directory, the web server will allow the script to be executed, and for the resulting HTML to be sent to the browser.

1.4 Demonstration of Creating a Virtual Directory and Setting Up Permissions

1.Starts Windows Explorer and create a new physical directory named *hotelhome* under the *\Inetpub\wwwroot* directory created by IIS on hard drive.

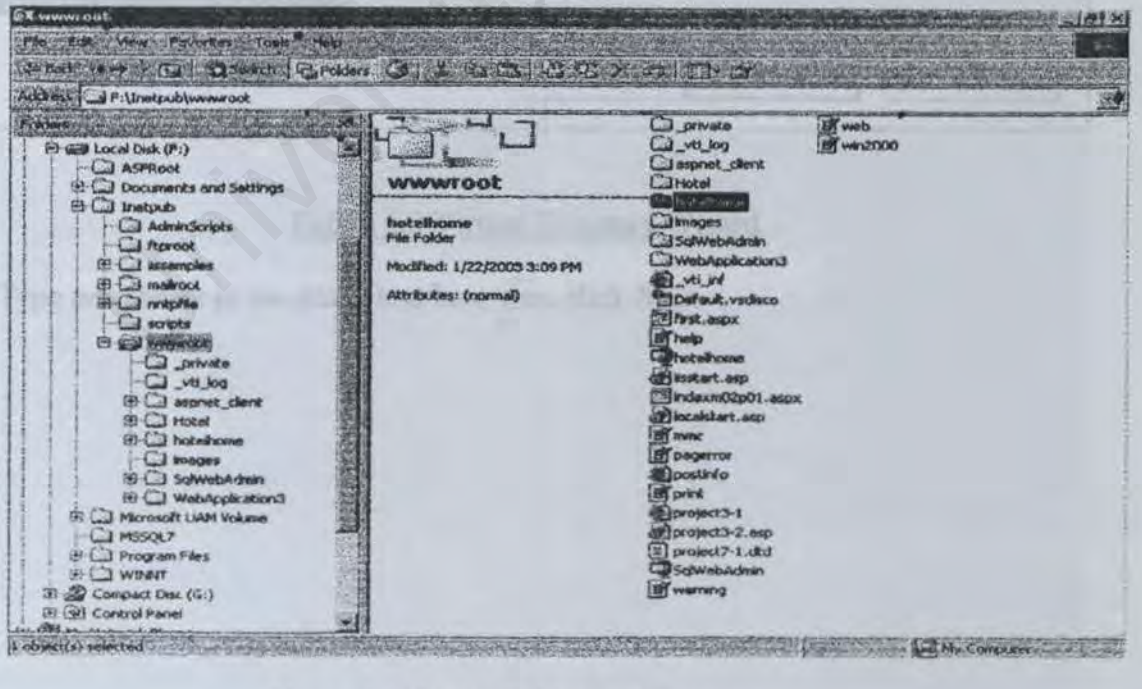

Figure 1.1 Create Folder At wwwroot

2.Next, start up the IIS admin tool. Right click on *Default Web Site*, and from the menu that appears select *New>Virtual Directory*. This starts the Virtual Directory Creation Wizard, which handles the creation of virtual directories and the setting up of permissions as well. A splash screen will be displayed, Click on Next.

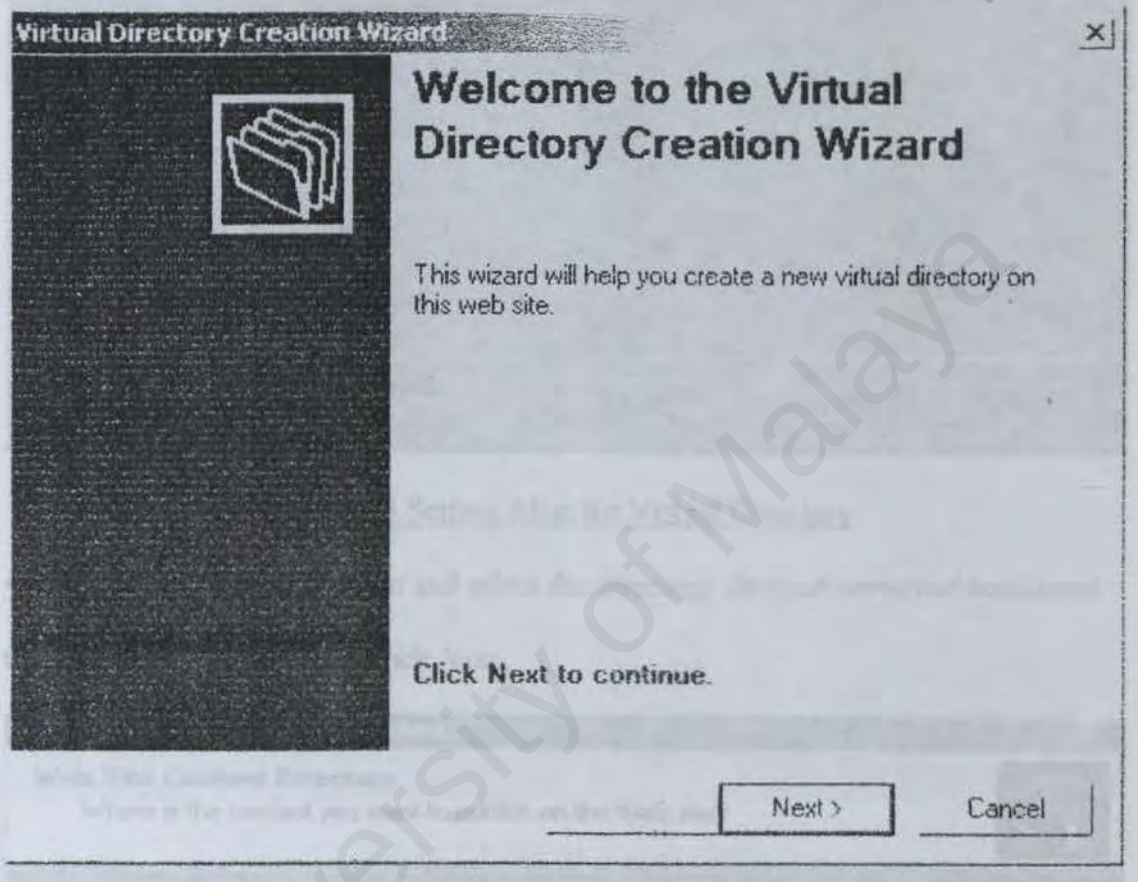

Figure 1.2 Virtual Directory Wizard

3.Type *hotelhome* in the *Alias* text box; then click *Next*.

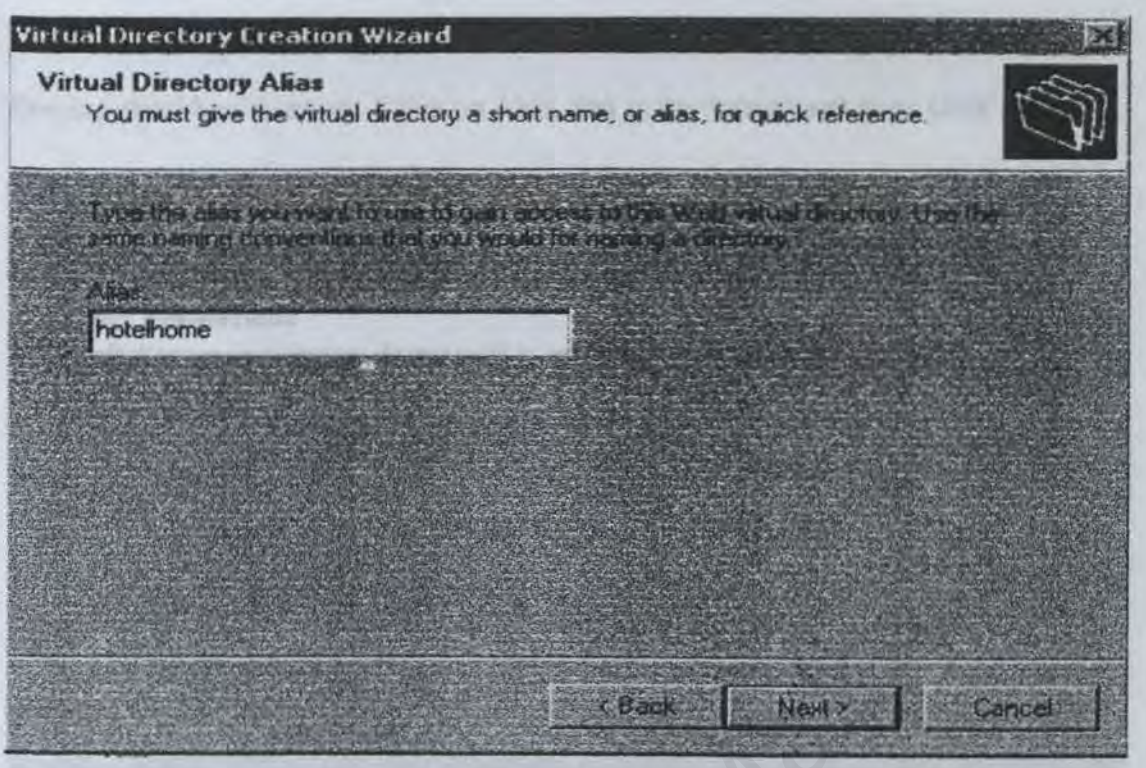

Figure 1.3 Setting Alias for Virtual Directory

4.Click on the *Browse...* button and select the directory *\Inetpub\wwwroot\hotelhome* that created in Step 1. Then click *Next*.

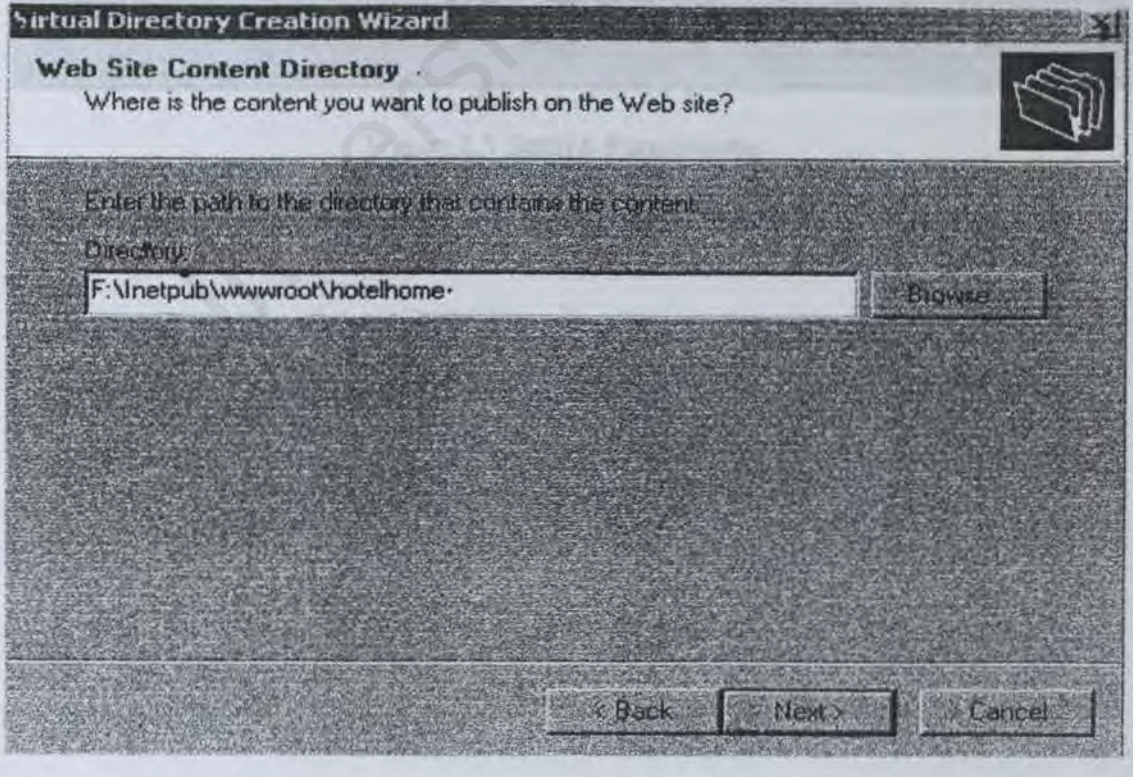

Figure 1.4 Browse Folder in wwwroot

5.Make sure that the *Read* and *Run scripts* checkboxes are checked, and that the *Execute* checkbox is empty. Click on *Next*, and in the subsequent page click on *Finish.*

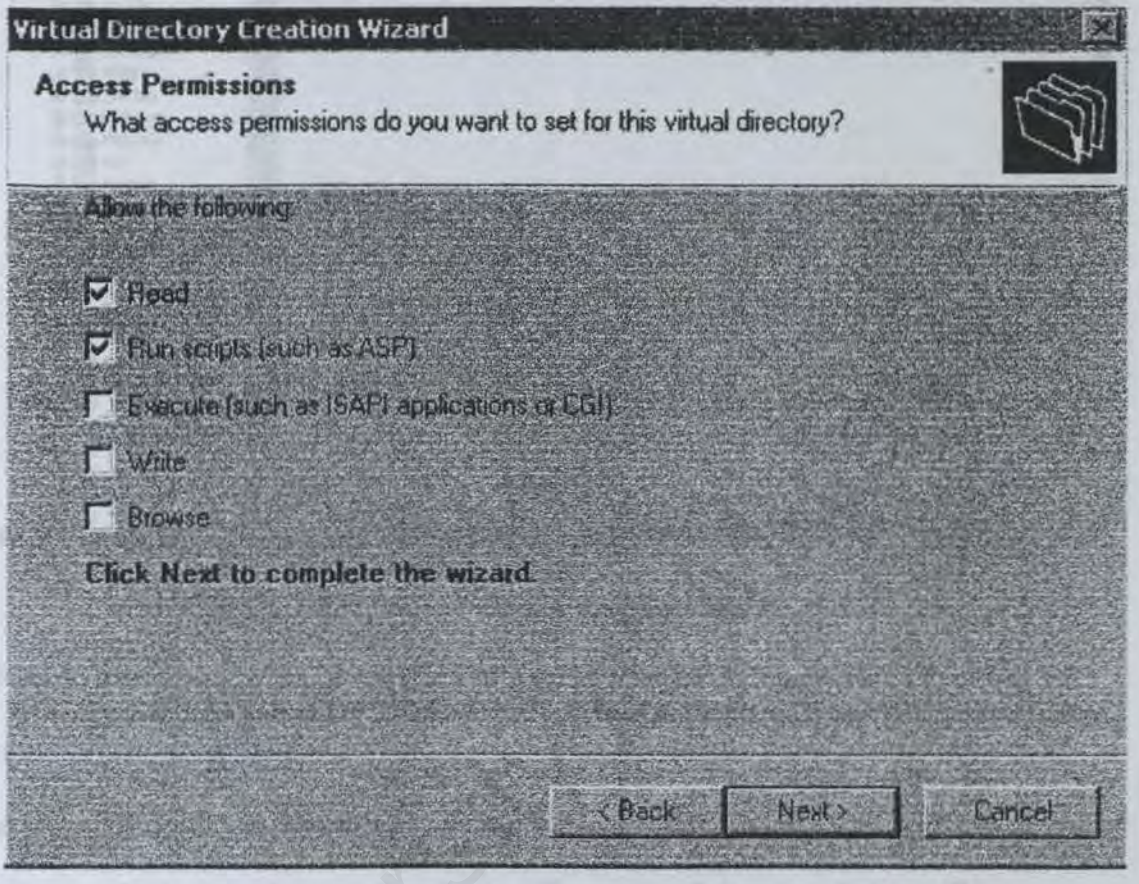

Figure 1.5 Setting Permissions

6. The hotelhome virtual directory will appear on the tree in the IIS admin window.

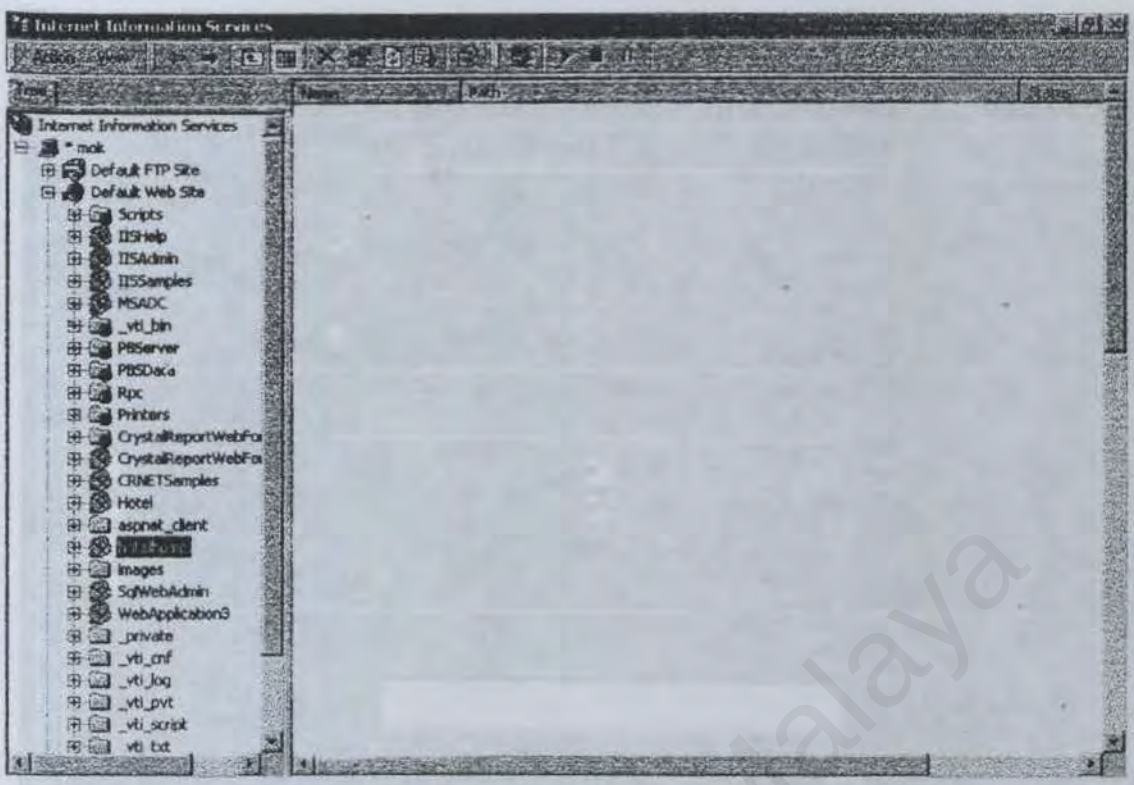

Figure 1.6 Created Virtual Directory Displayed in IIS

Finally, permissions can be assigned to a new directory as we create it, by using the options offered in the *Virtual Directory Wizard*. Alternatively, it also can be set at any time from the IIS admin tool. To do this, right click the *hotelhome* virtual directory in the IIS admin tool, and select Properties. Following dialog will be displayed:

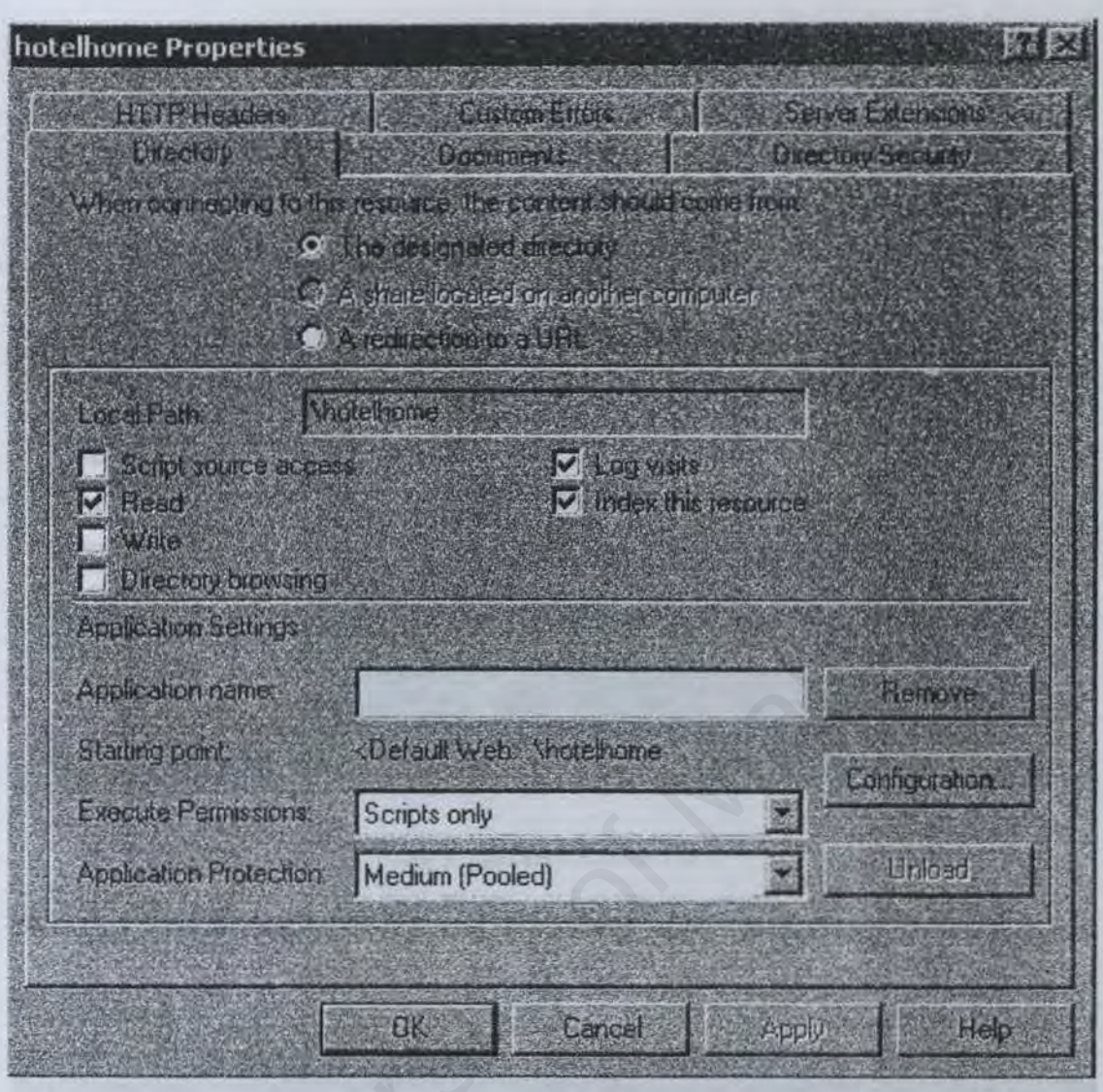

Figure 1.7 Setting Properties of Virtual Directory

1.5 Setting Up The Database

For those who wish to install this system, all they need to do is to install Microsoft SQL Server. After that, they have to create a new database with the name HotelDB. While user does not need to create the table one by one, user can run the .sql script file which comes with this system in the Query Analyzer. User has to make sure they selected the HotelDB database from the dropdown box as shown in Figure 1.8.

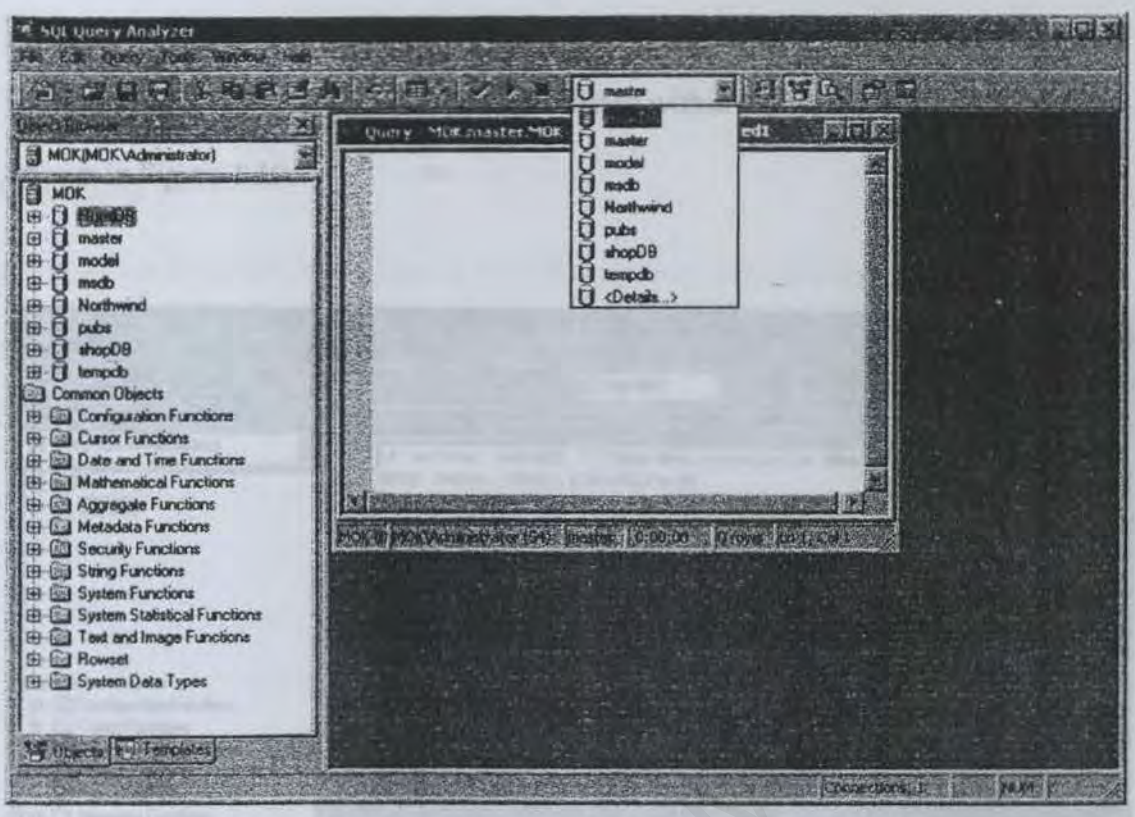

Figure 1.8 Query Analyzer

After that open the .sql script file, and then press F5 to execute the query. As shown in Figure 1.9.

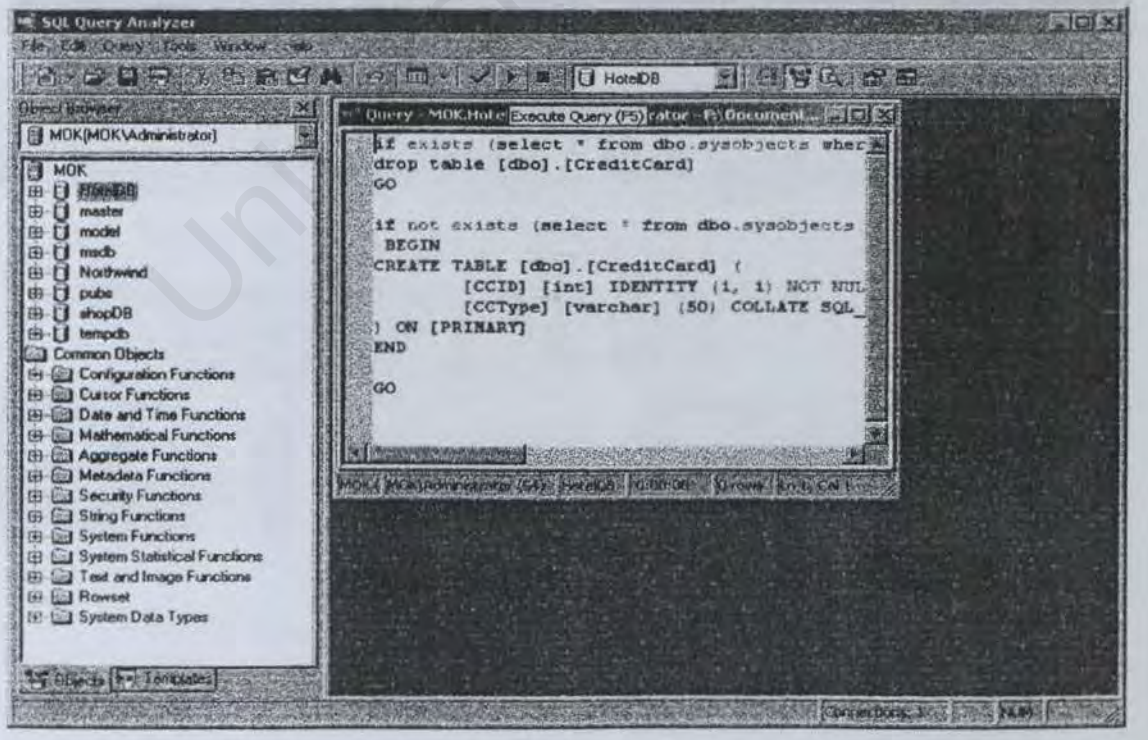

Figure 1.9 Execute the Query.

If the nothing goes wrong, the sentence **The command(s) completed successful** will be return, which means the table already created within the HotelDB database as shown in Figure 1.10.

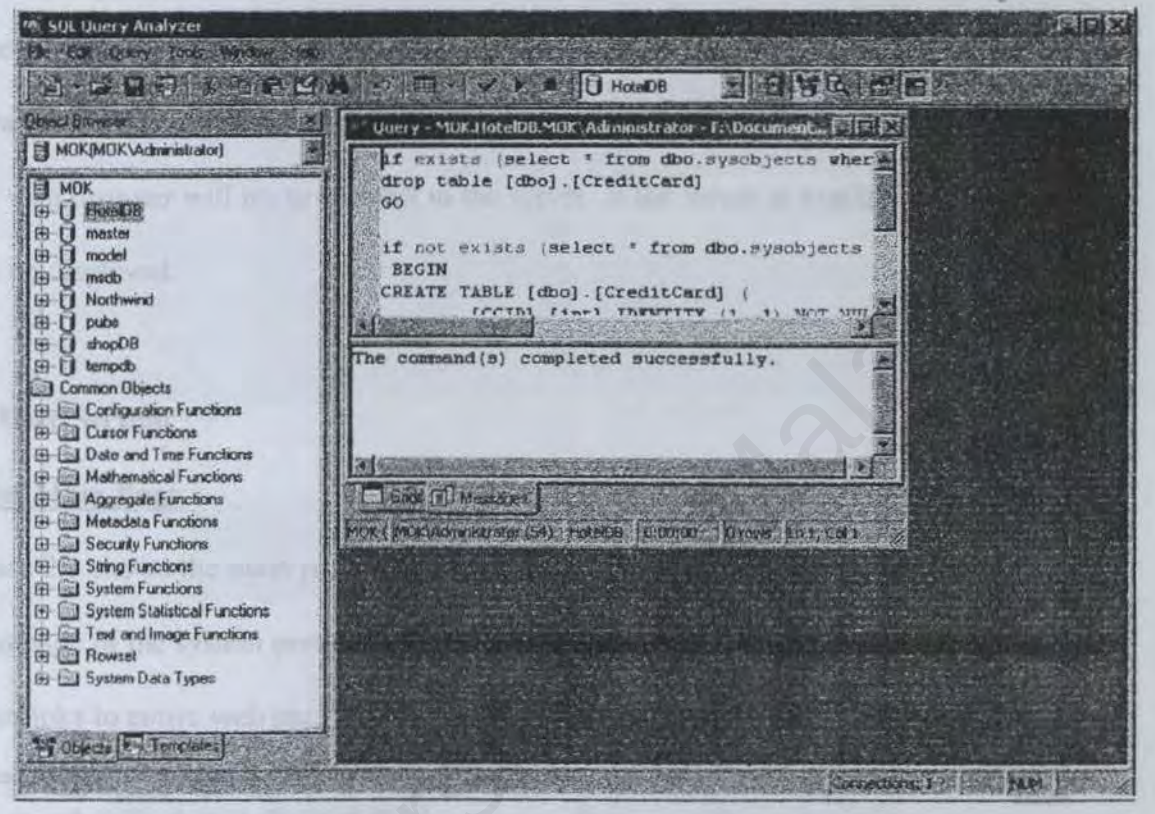

Figure 1.10 Command Successful

Figure 2.1 Hotel Main Page

Accommodation Page

The **Accommodation** hyperlink will lead user to Accommodation page, which possessed the information about the extraordinary parts of the hotel.

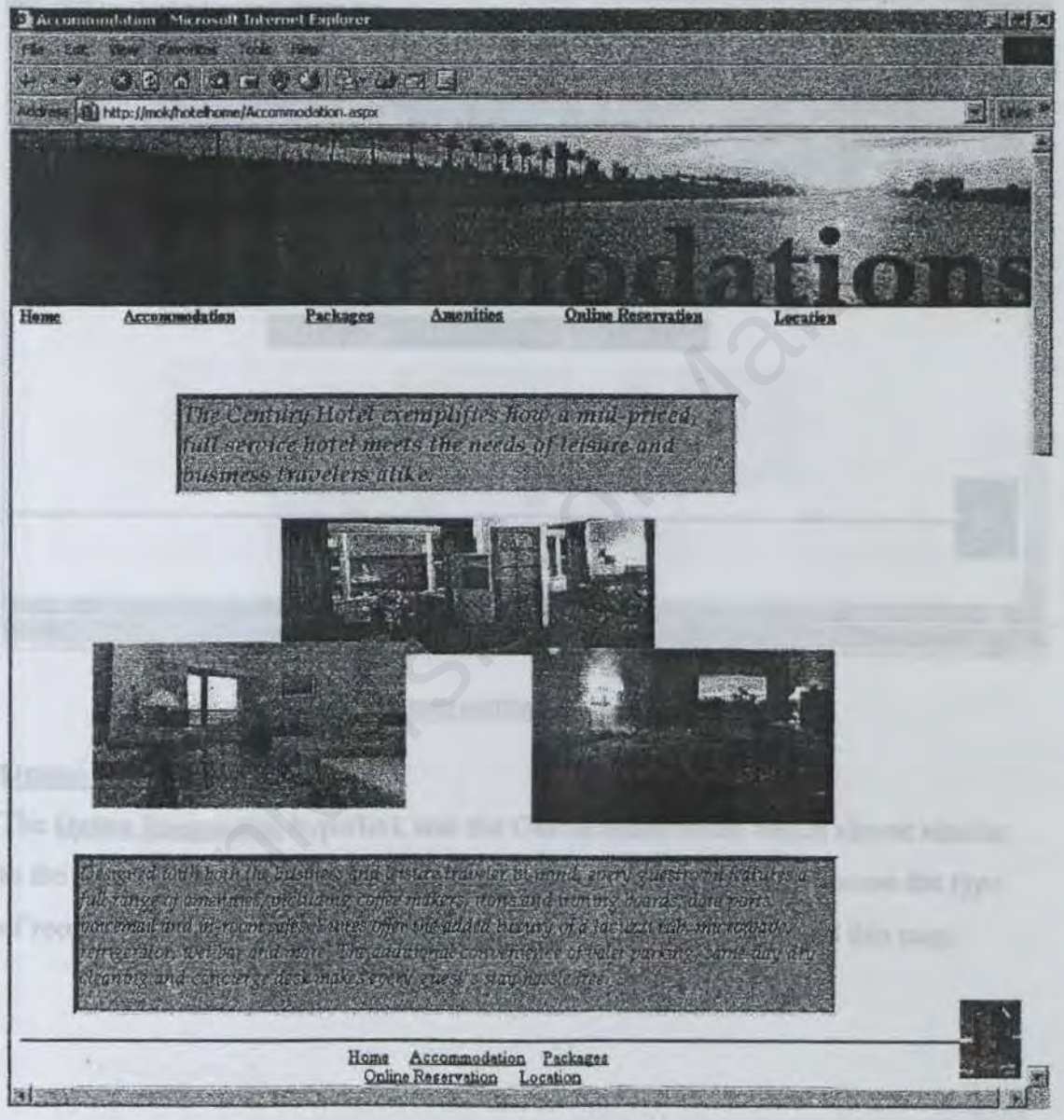

Figure 2.2 Accommodations Page

Packages Page

The **Packages** hyperlink will lead user to Packages page, this is the page where user can reserved their favourite packages hassle free. Firstly users have to choose the

Package Reservation Not Available Page

If unfortunately, the user-entered date was not available, the following message will return, Figure 2.4 will pop up. There is a hyperlink in this page that enable user to re-enter another reservation date.

Figure 2.4 Reservation Not Available Page

Online Reservation Page

The **Online Reservation** hyperlink was the Online Reservation which almost similar to the Package reservation page. The only different, is the user will choose the type of room they want to reserve instead of package. Figure 2.5 displayed this page.

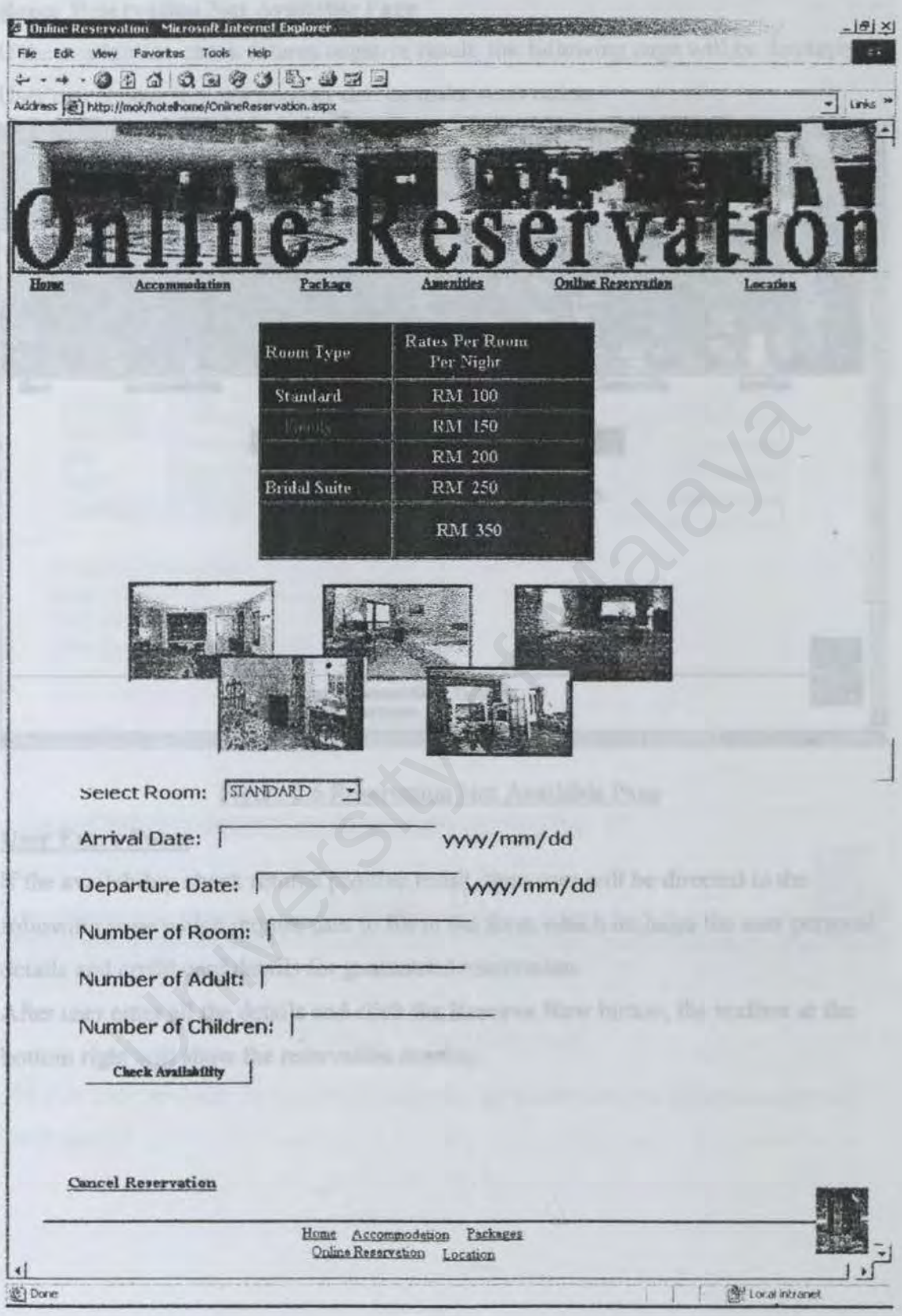

Figure 2.5 Room Reservation Page

Room Reservation Not Available Page

If the availability check returns negative result, the following page will be displayed. User can choose to enter another date to make reservation.

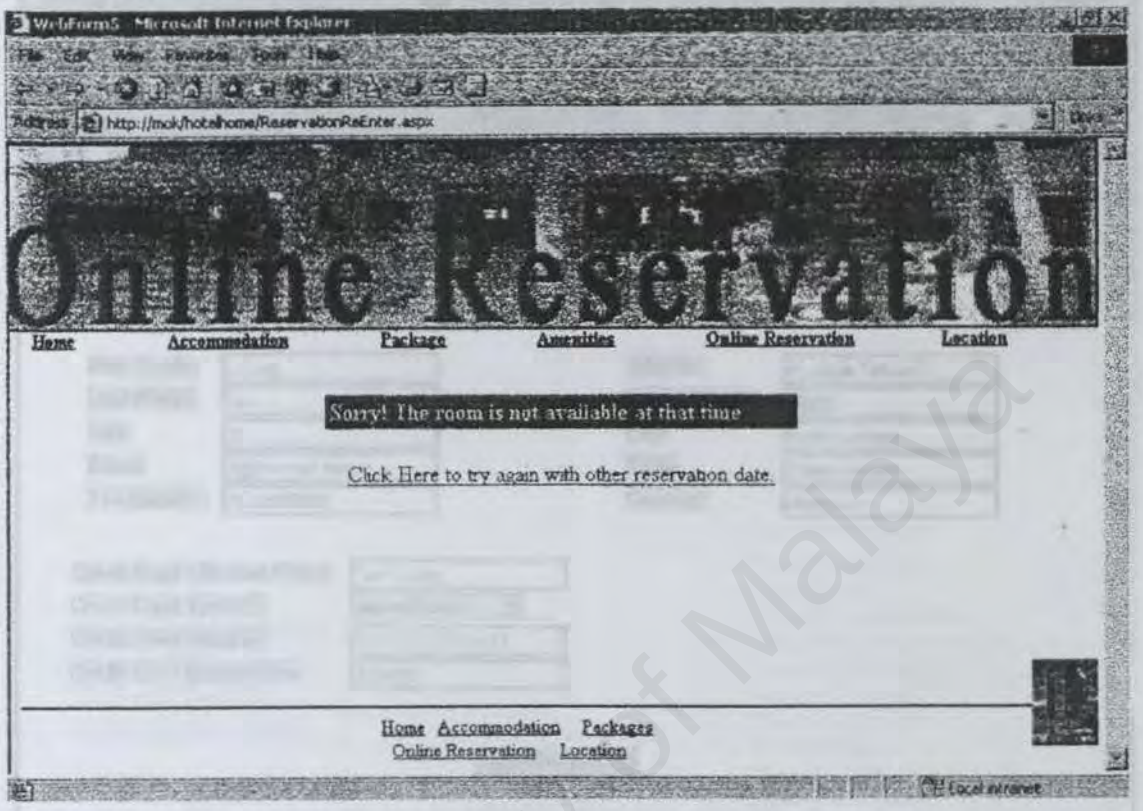

Figure 2.6 Reservation Not Available Page

User Entry Form

If the availability check returns positive result, then user will be directed to the following page which require user to fill in the form which includes the user personal details and credit card details for guaranteed reservation.

After user enter all the details and click the **Reserve Now** button, the textbox at the bottom right will show the reservation number.

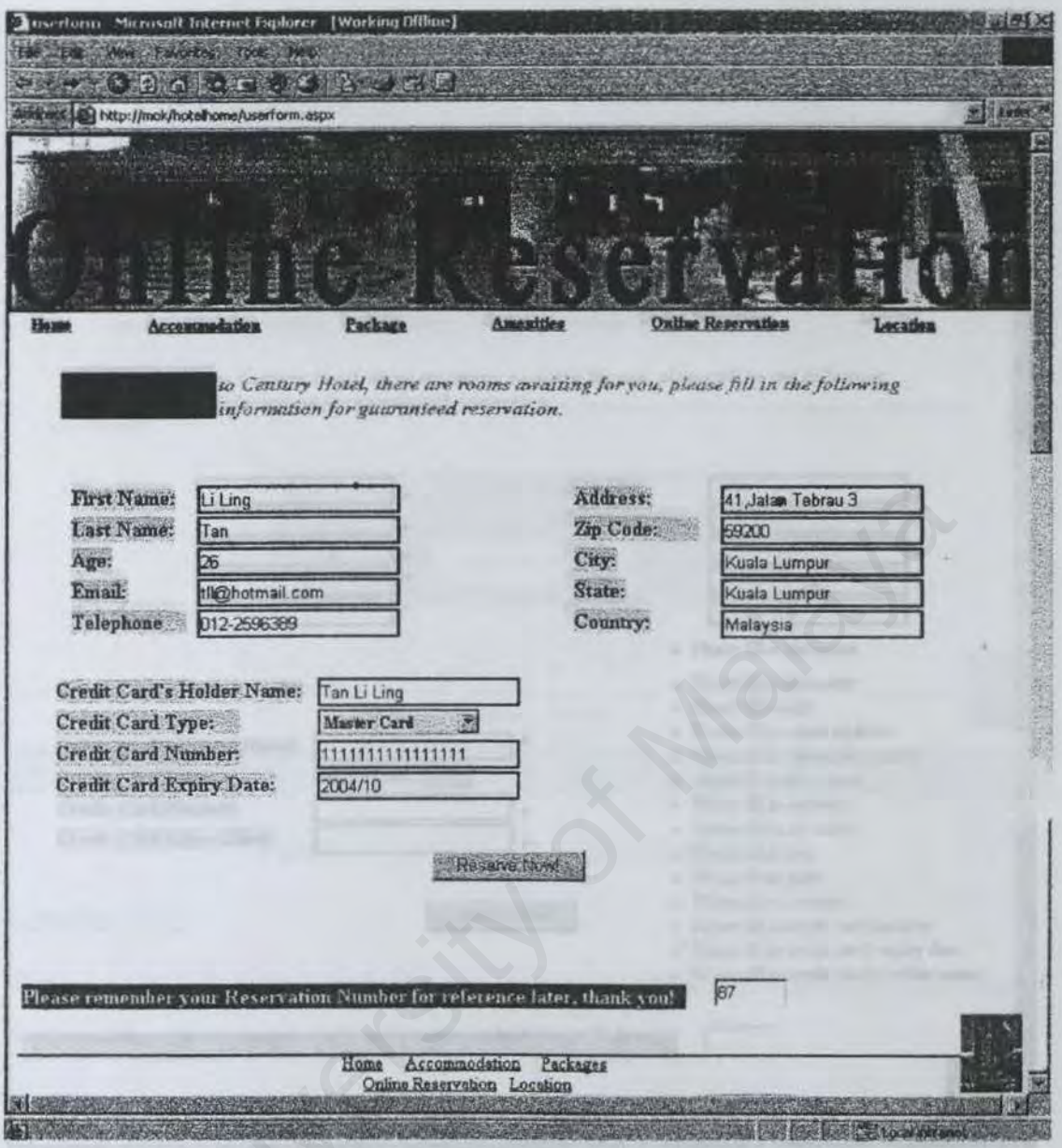

Figure 2.7 User Entry Form

If a user tries to abuse the system by not entering the details, the error message will be displayed.

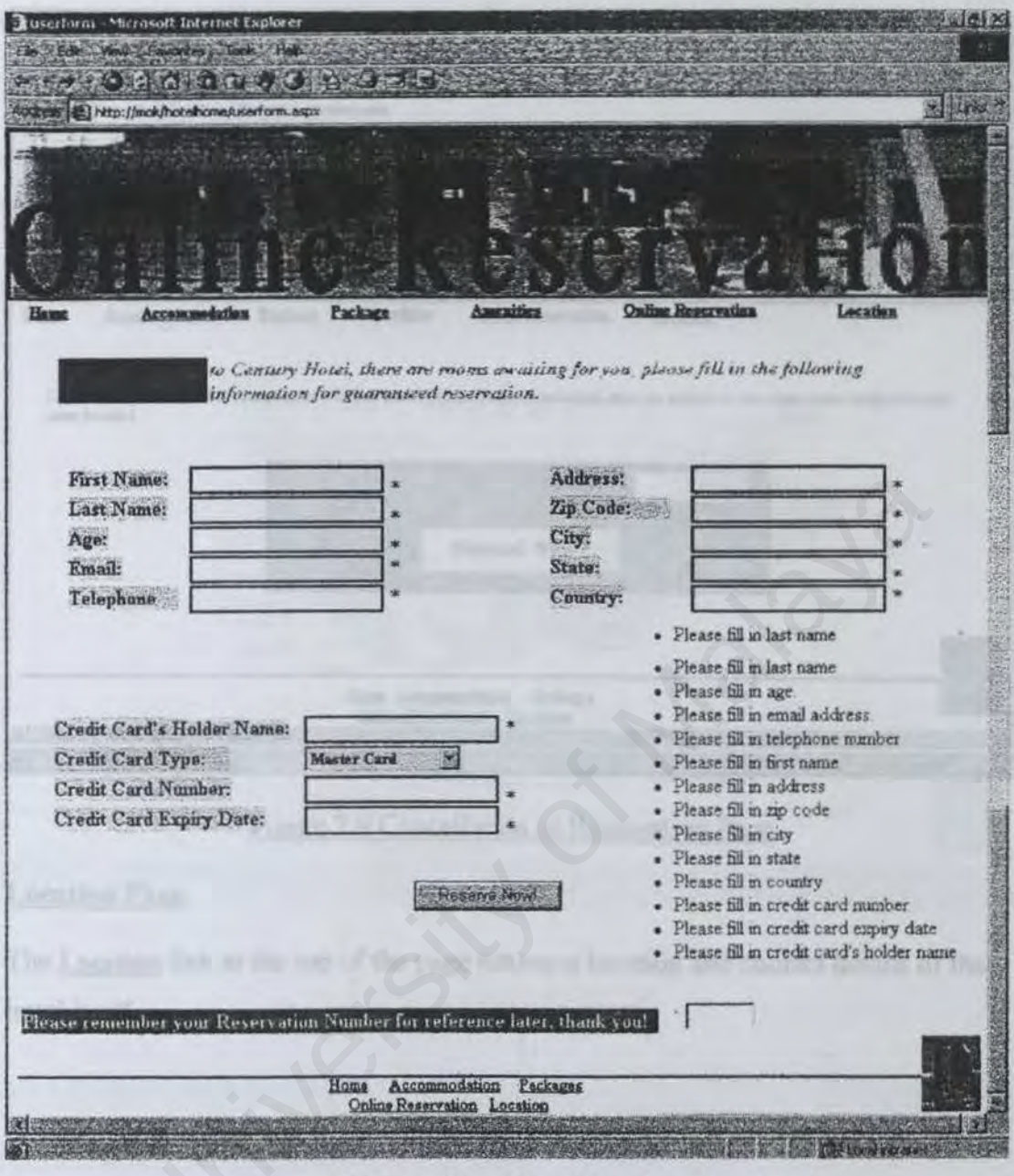

Figure 2.8 User Form That Not Completed

Cancel Reservation Page

At the bottom of Room Reservation page, there is a **Cancel Reservation** hyperlink to link user to cancel reservation. When the Cancellation page displayed, the user who intend to cancel their reservation can do so by entering their reservation number and the system will search for their record in database and delete the record.

Figure 2.9 Cancellation of Reservation Page

Location Page

The **Location** link at the top of the page returns a location and contact details of the hotel itself.

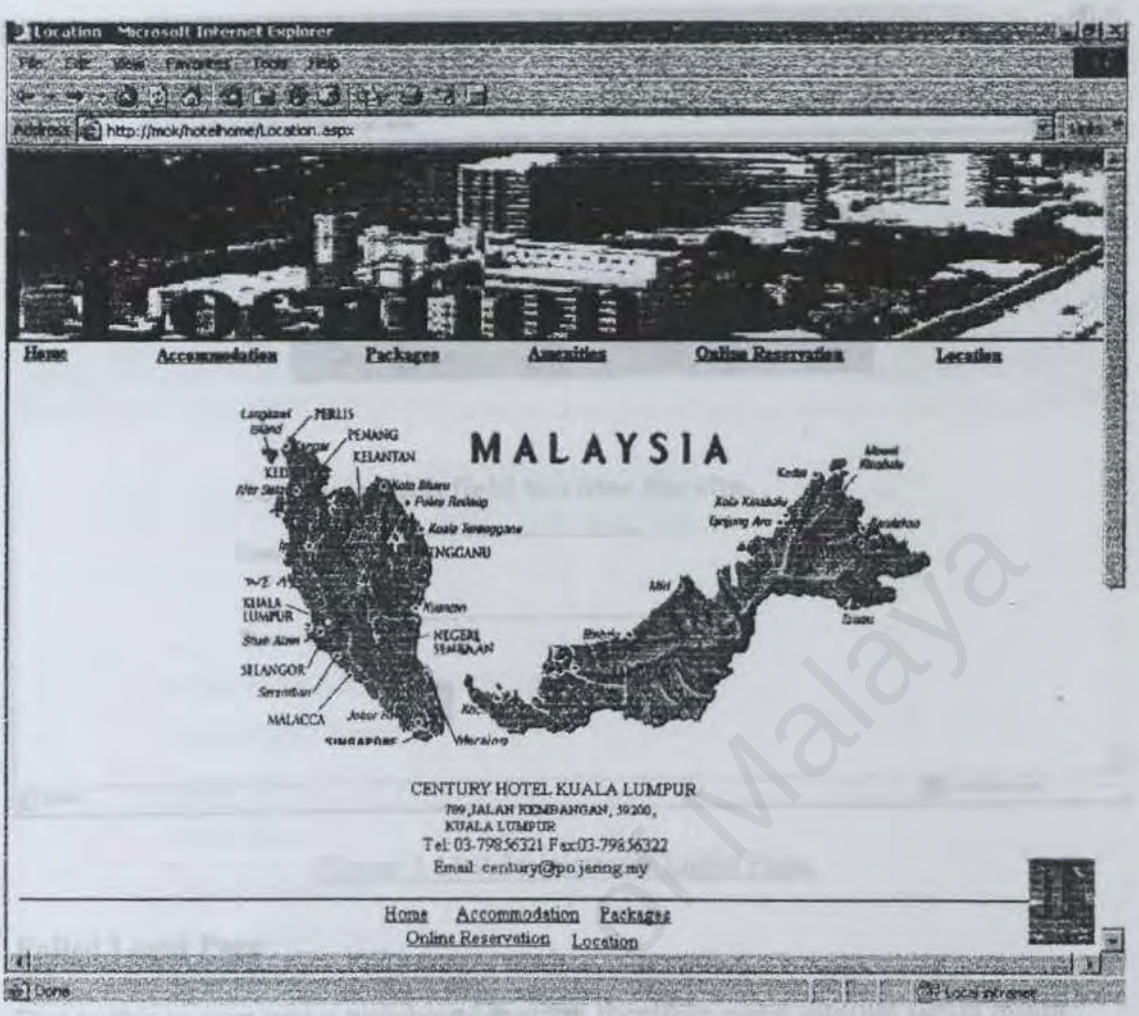

Figure 2.10 Location Page

2.2 Administration Section

Administrator Login Page

For the administration site, as depicted previously was meant to provide information instead of raw data to decision maker in the hotel in order to boost the accommodation rate of a hotel. This site was only allowed for the authorized personnel, therefore hotelier need to entry user name and password in order to login successfully. Figure 2.11 depict this function.

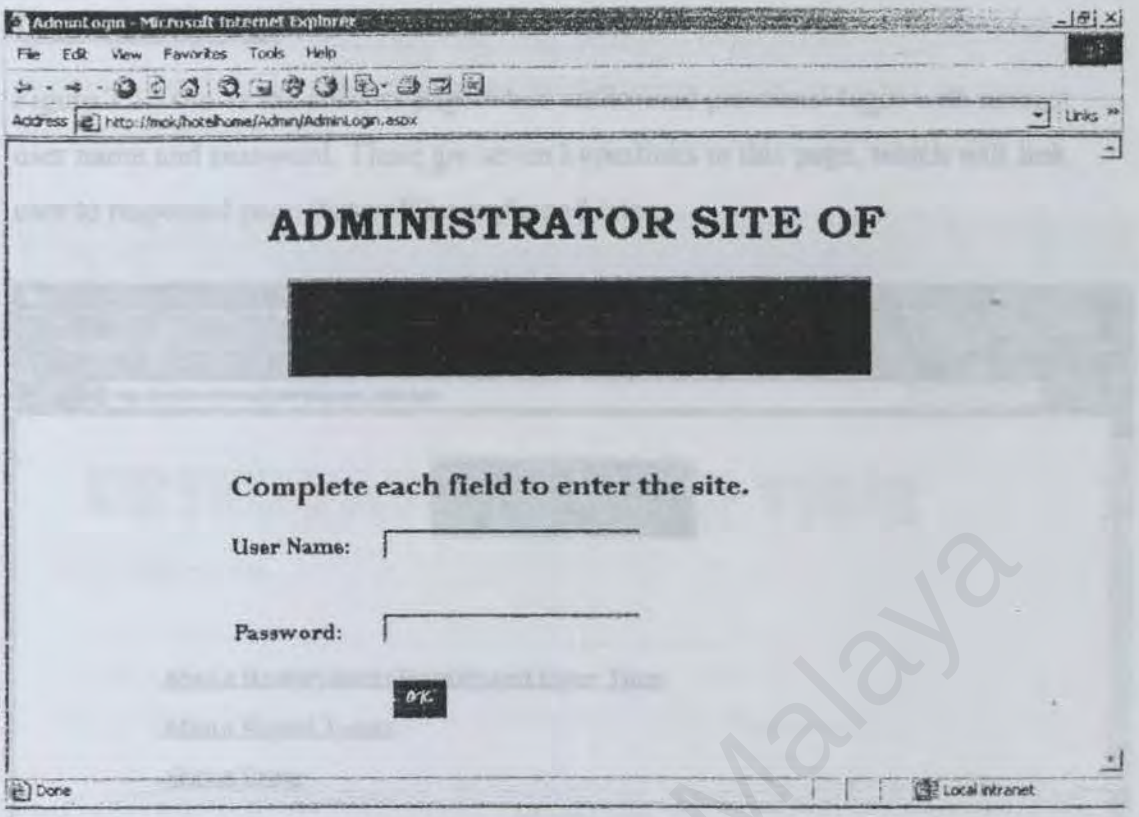

Figure 2.11 Administrator Login Page.

Failed Login Page

Due to this system was a web-based system; therefore some Internet surfer might accidentally browse to the login page. Even they might attempt to enter the site, the system will block them by returning the following message, in Figure 2.12.

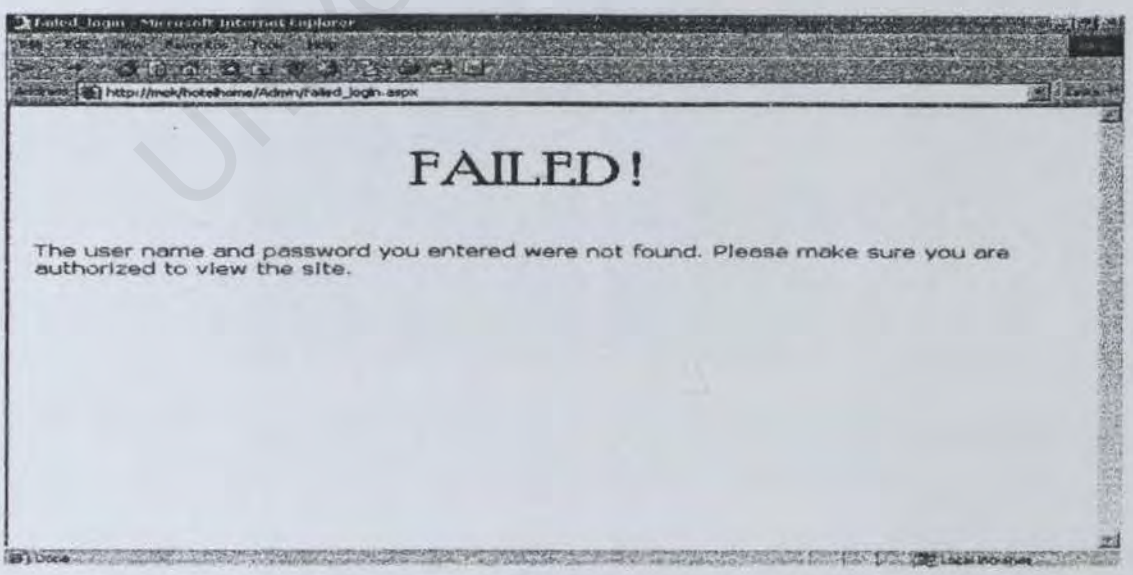

Figure 2.12 Failed to Login Page.

Login Success Page

Figure 2.13 shows the success page when authorized personnel login with correct user name and password. There are seven hyperlinks in this page, which will link user to respected page that will be explained later.

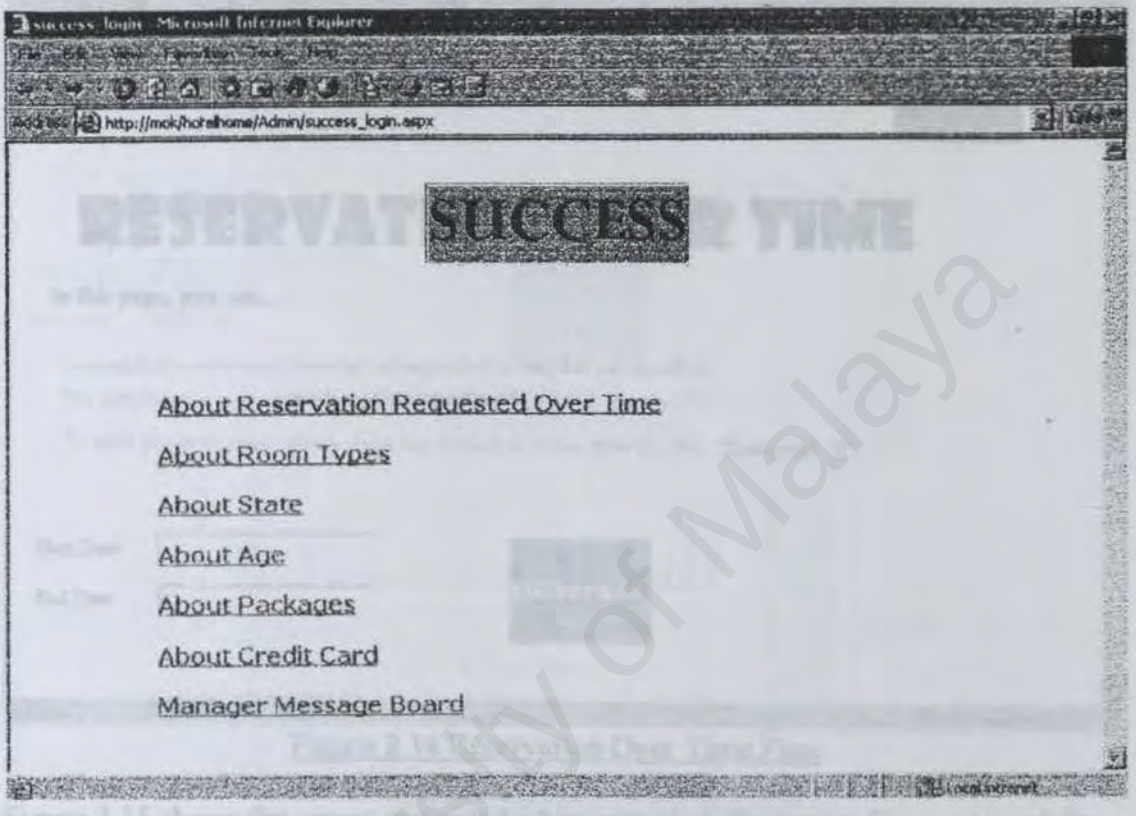

Figure 2.13 Login Succeed Page

1. The **About Reservation Requested Over Time** link will bring user to Figure 2.14. In this page, user can enter the start date and end date where the report generated will show how many reservations have been requested during this particular duration of time.

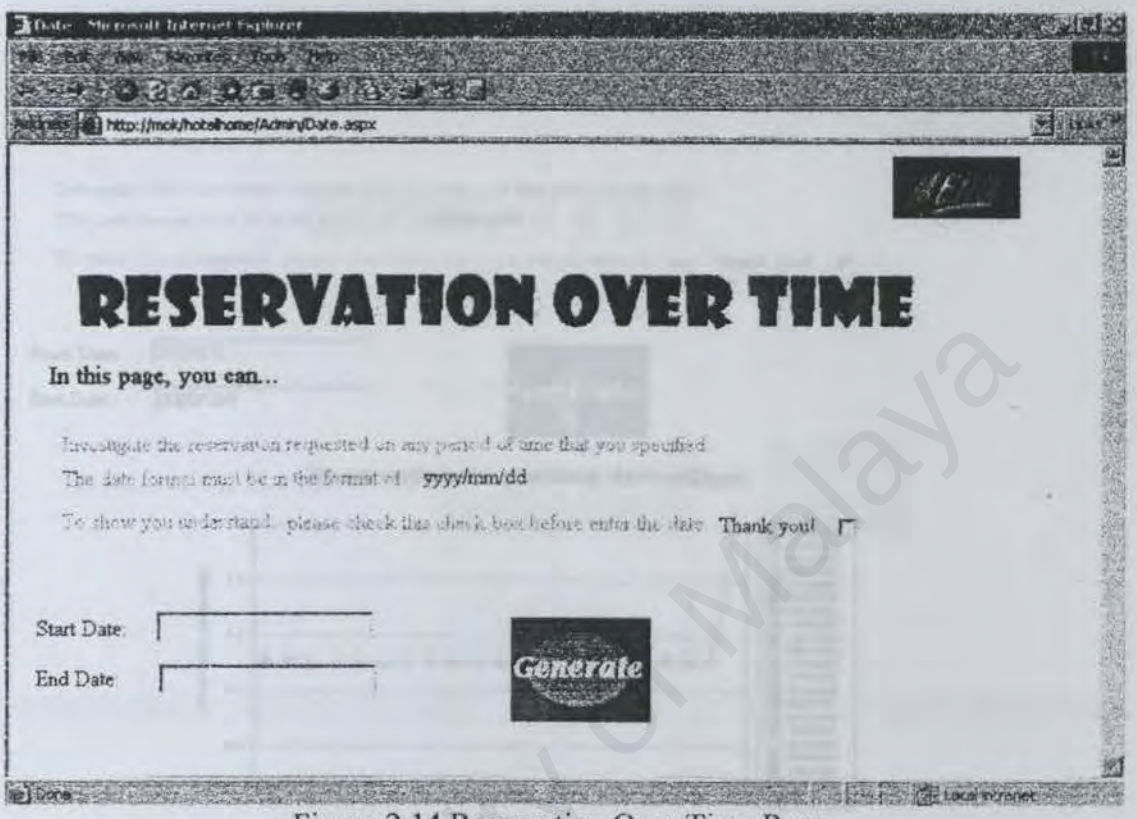

Figure 2.14 Reservation Over Time Page

Figure 2.15 shows the report generated when user click the button **Generate** and the **Menu** button will lead user back to success page where user can choose which link to browse.

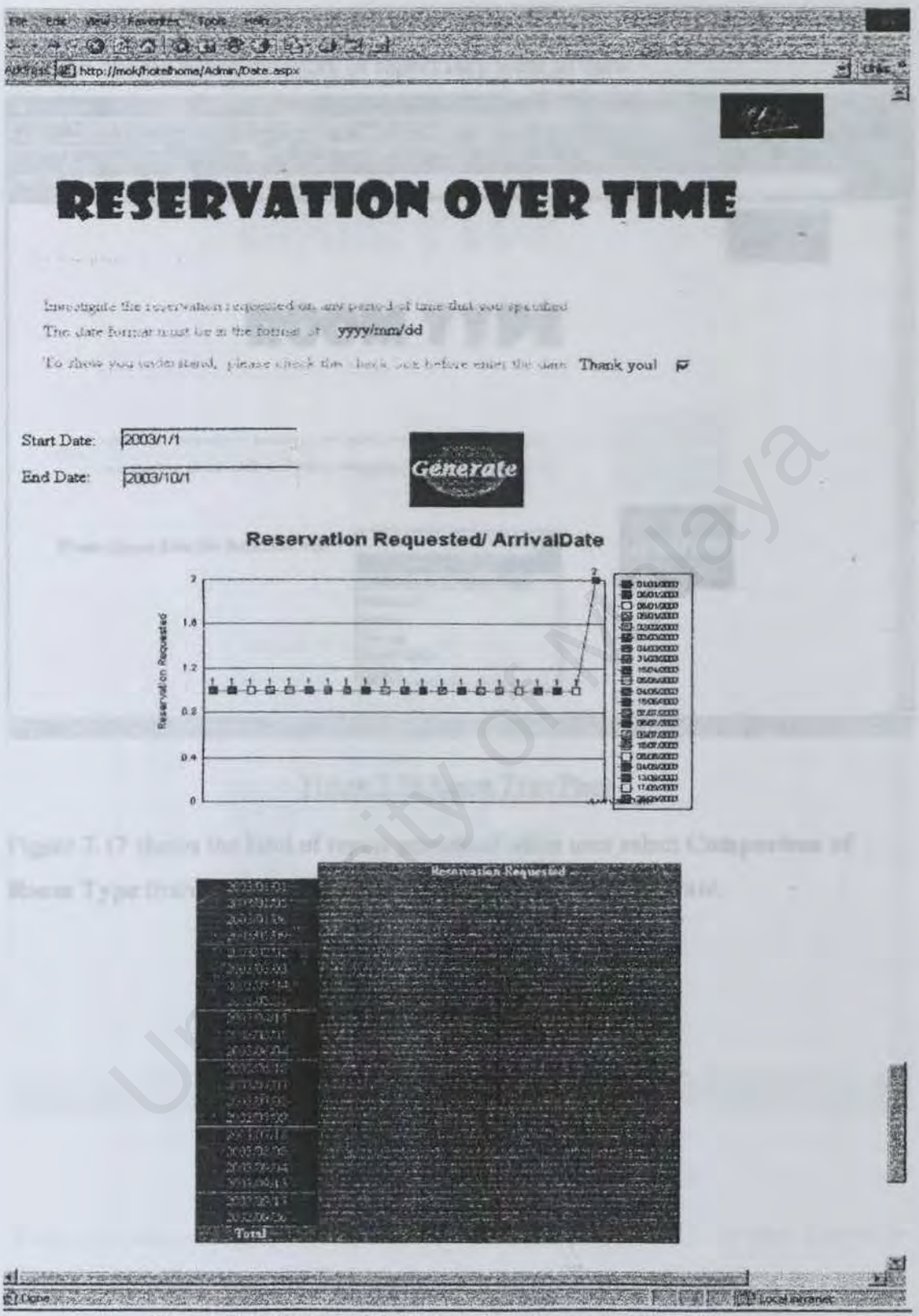

Figure 2.15 Report Of Reservation Requested Over Time

2. About Room Types link will lead user to Figure 2.16. From the dropdodwn box, user can choose which category of report they want to view.

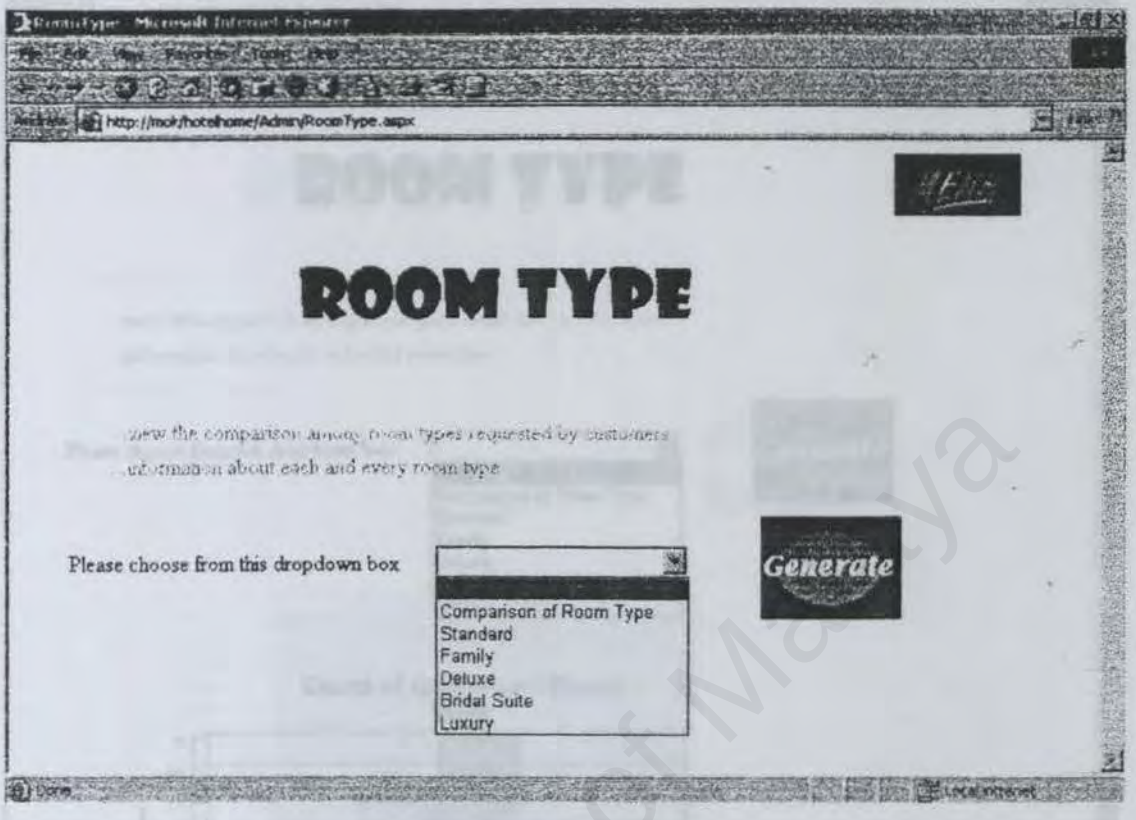

Figure 2.16 Room Type Page

Figure 2.17 shows the kind of report generated when user select **Comparison of Room Type** from the dropdown box and click the button **Generate**.

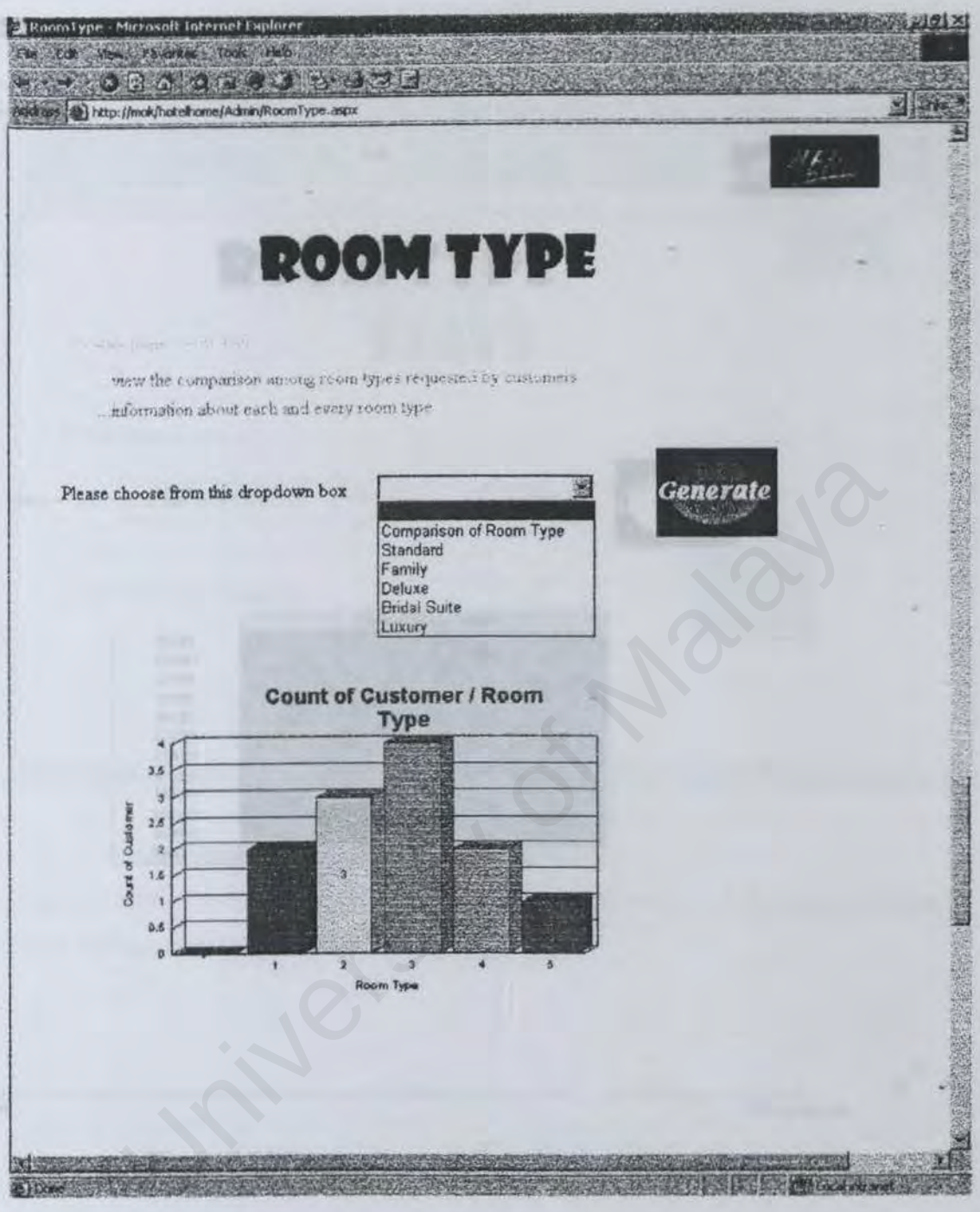

Figure 2.17 Report of Comparison Room Types

If user chooses subsequent selections, the type of report will be in the same format as shown in Figure 2.18. In this example, the **Standard** room type was chosen.

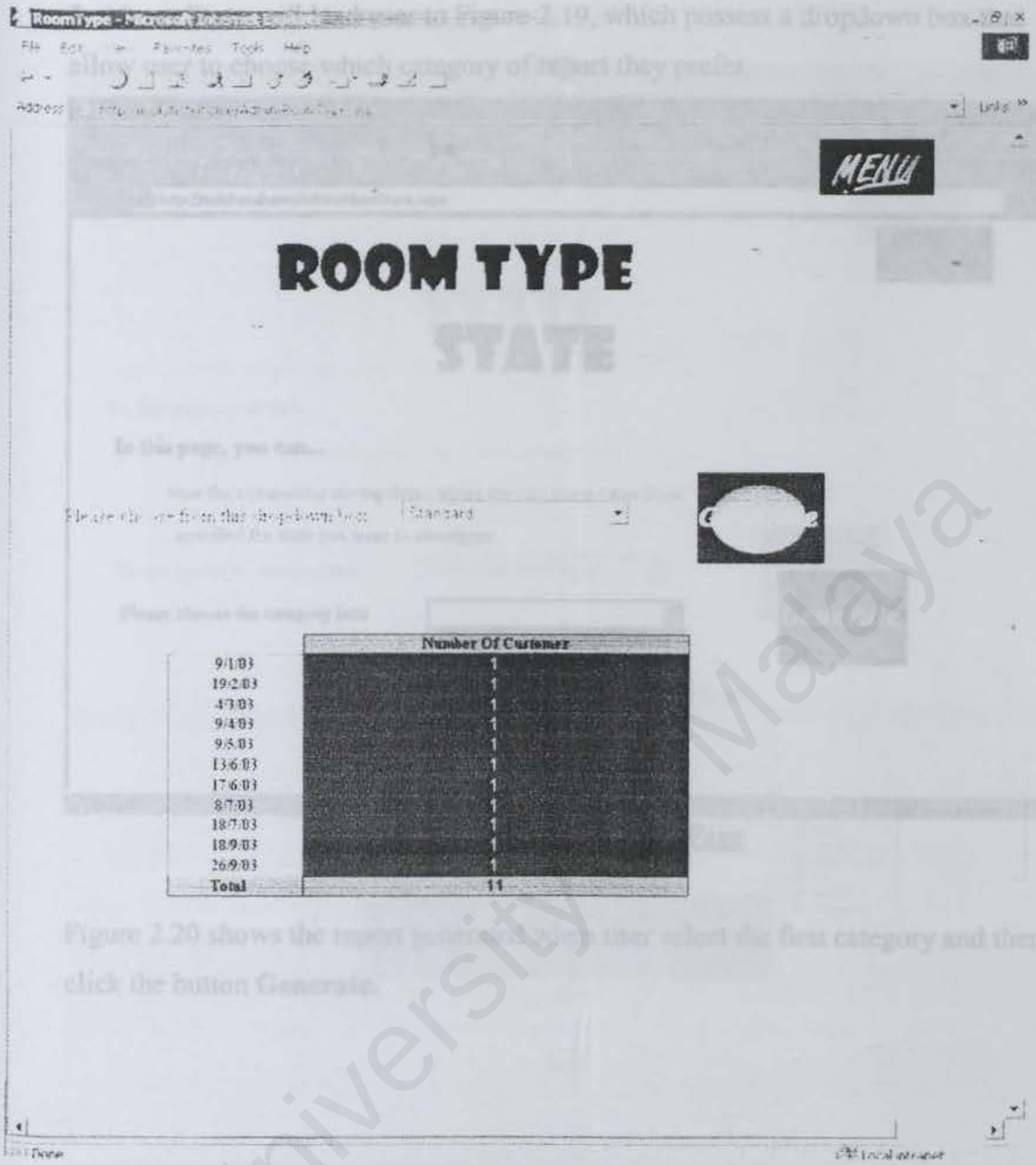

Figure 2.18 Report Generated on Standard Room Type.

3. About State will lead user to Figure 2.19, which possess a dropdown box that allow user to choose which category of report they prefer.

Figure 2.19 About State Page

Figure 2.20 shows the report generated when user select the first category and then click the button **Generate.**

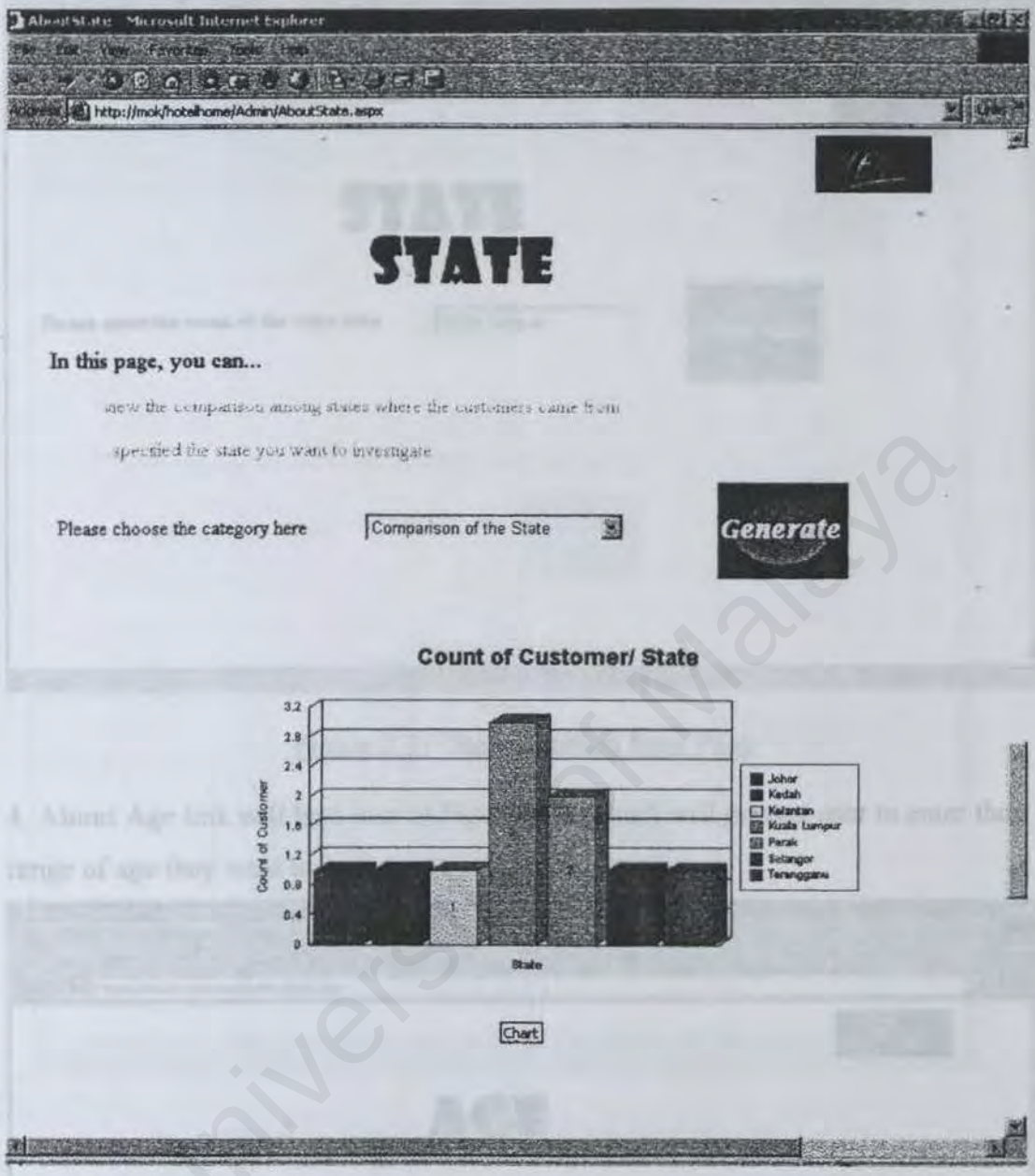

Figure 2.20 Report Generated on Comparison of the State

Figure 2.21 shows the page that will be displayed when user select **Browse each state individually**. In this page, user has to enter state name, which user want to know more details about customer details from this state.

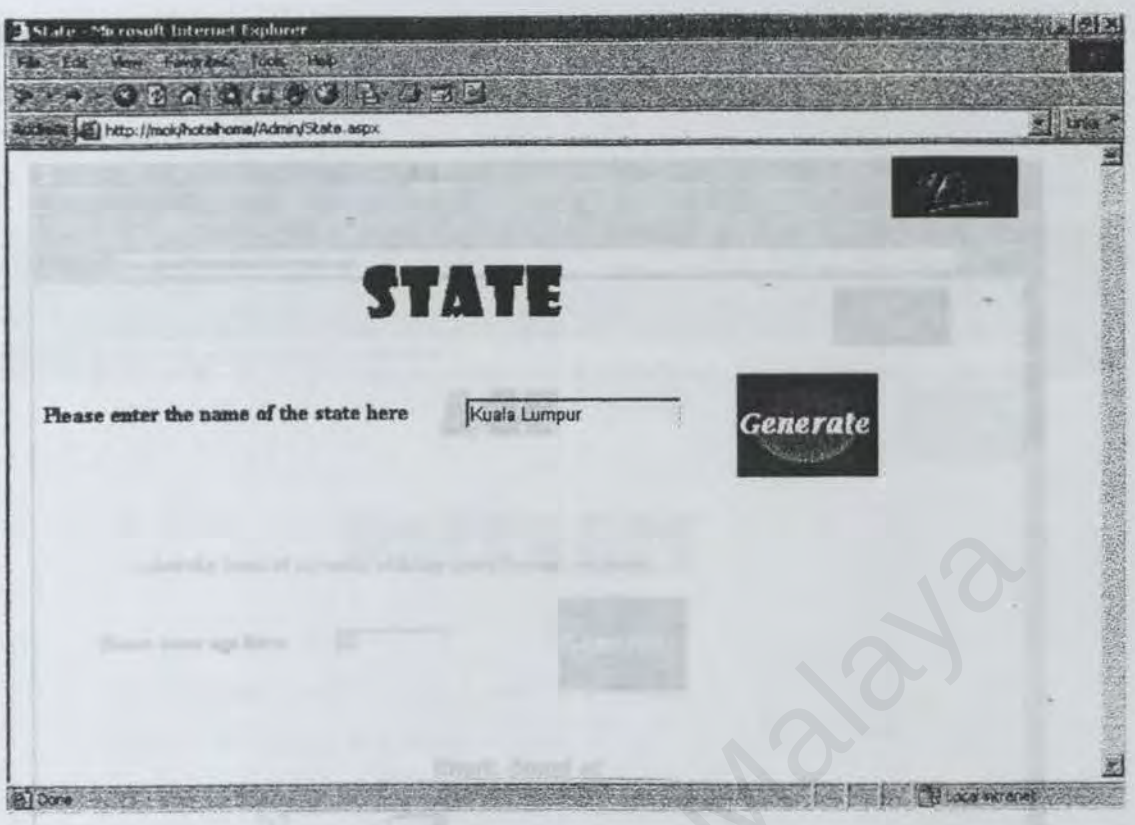

Figure 2.21 User Specified State Page

4. **About Age** link will lead user to Figure 2.22 which will prompt user to enter the range of age they want to investigate in the text box.

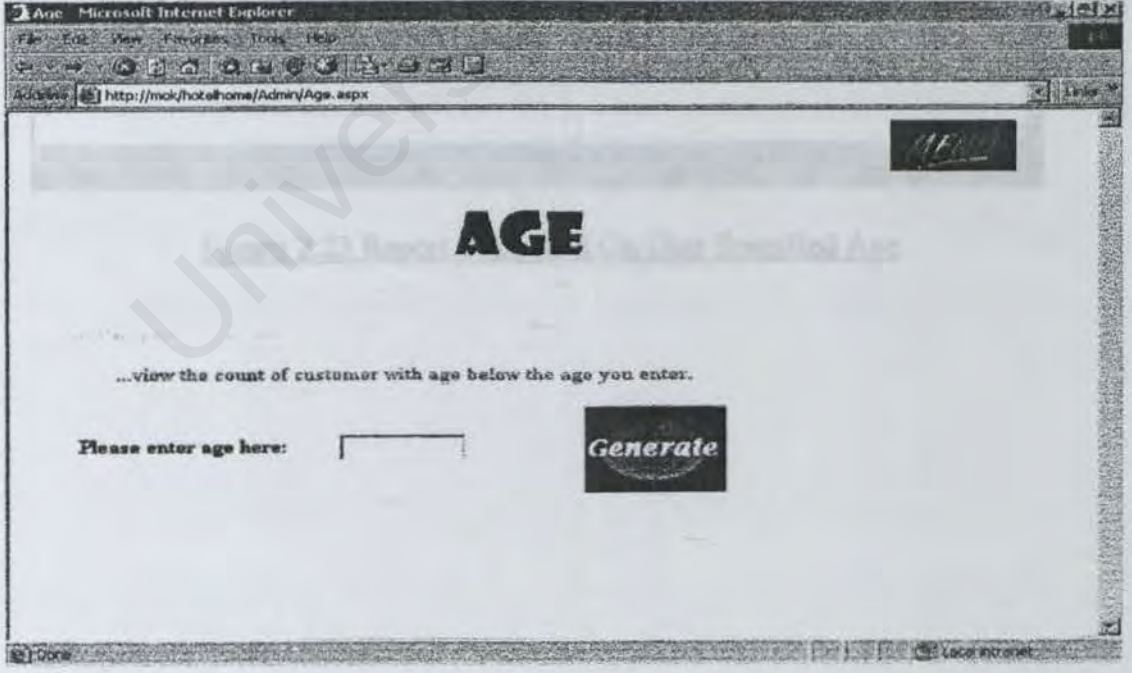

Figure 2.22 About Age Page

Figure 2.23 shows the generated report when user enters the age in the text box and then clicks the button **Generate**.

Figure 2.23 Report Generated On User Specified Age

5. Figure 2.24 shows the page displayed when user click the **About Package** link on success page. User has to choose from the dropdown box for the category they want the report to be.

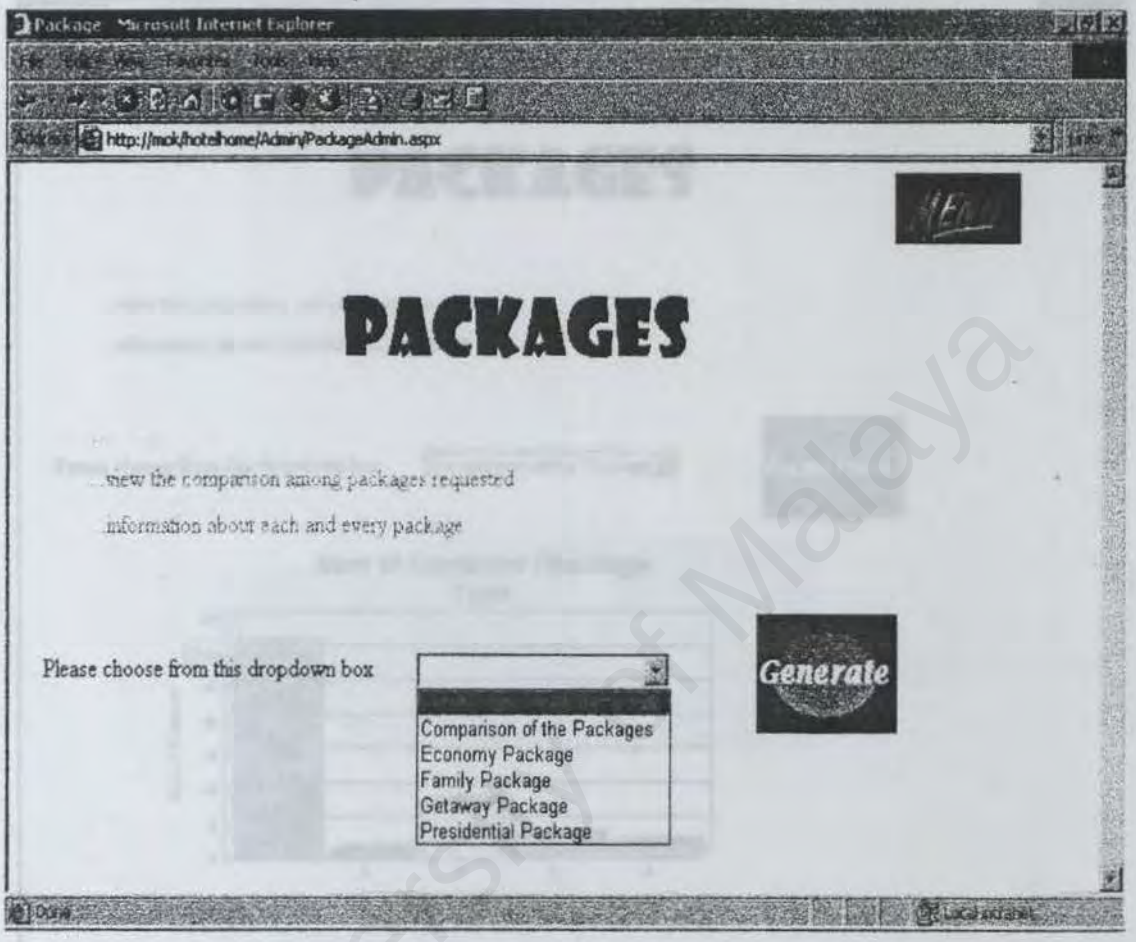

Figure 2.24 About Pakcage Page

Figure 2.25 shows the report generated when user choose the **Comparison of the Packgages** and then followed by the on click event on the **Generate** button.

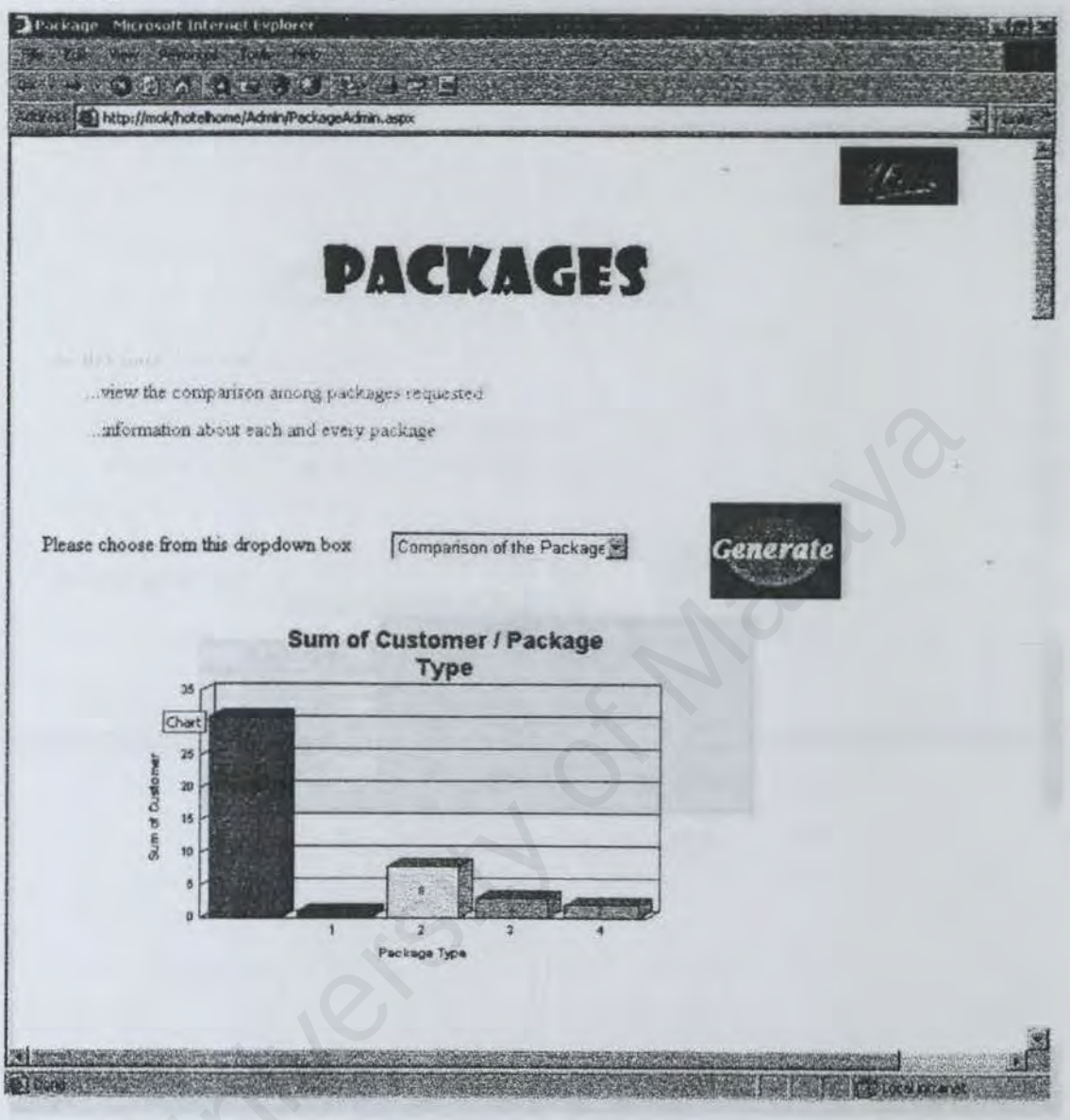

Figure 2.25 Report Generated On Comparison Of The Packages.

Figure 2.26 shows what the report layout when Family Package has been chosen. The same kind of report goes to other choices in the selection.

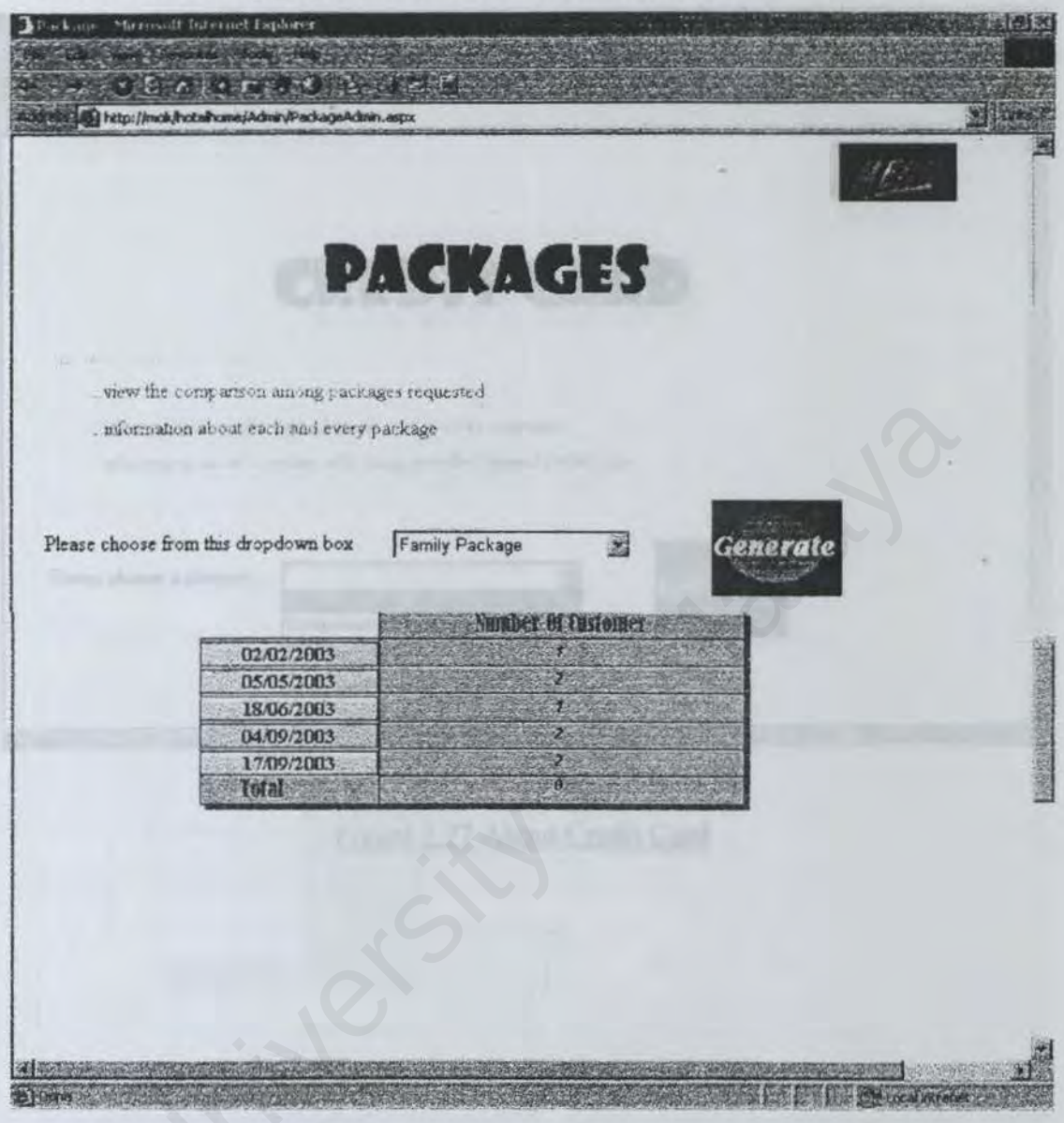

Figure 2.26 Report Generated On Family Package.

6. **About Credit Card** link in the success page will lead user to Figure 2.27. The dropdown box returns some category of choices to be chosen.

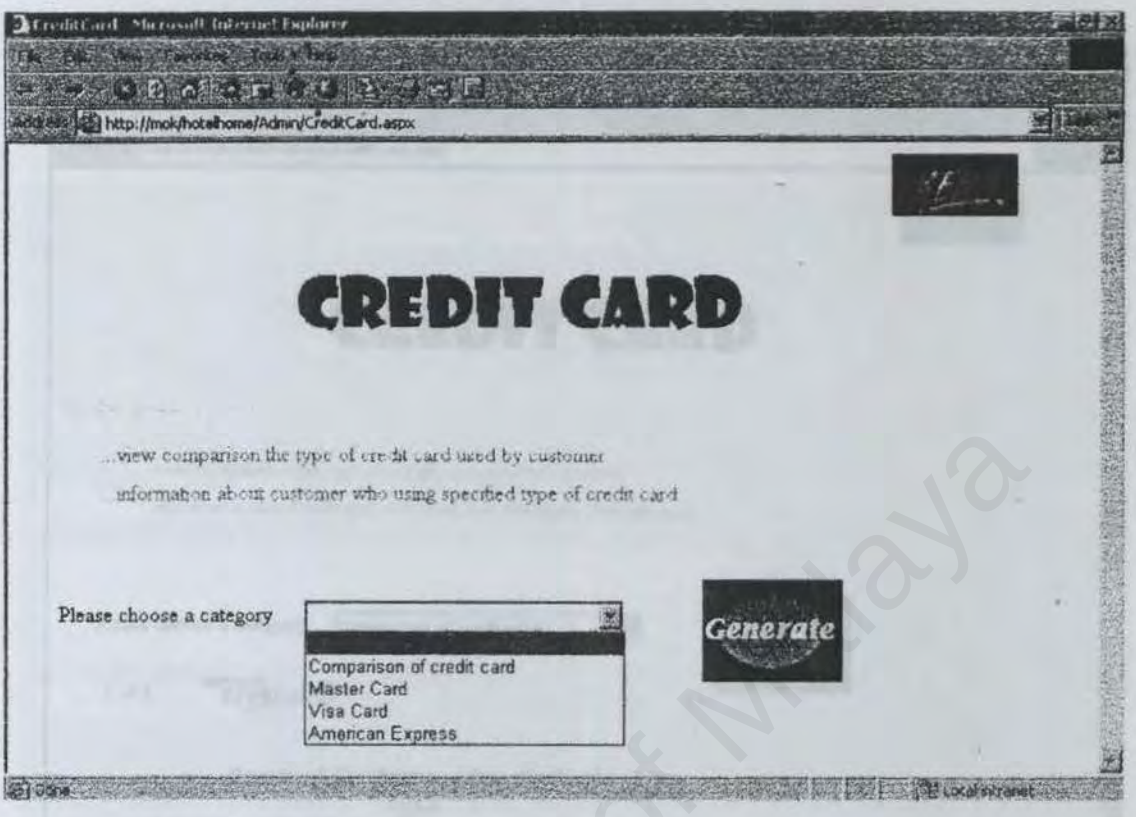

Figure 2.27 About Credit Card

Figure 2.28 shows the result of report when user choose the **Comparison of Credit Card** from the dropdown box and click **Generate** button right after.

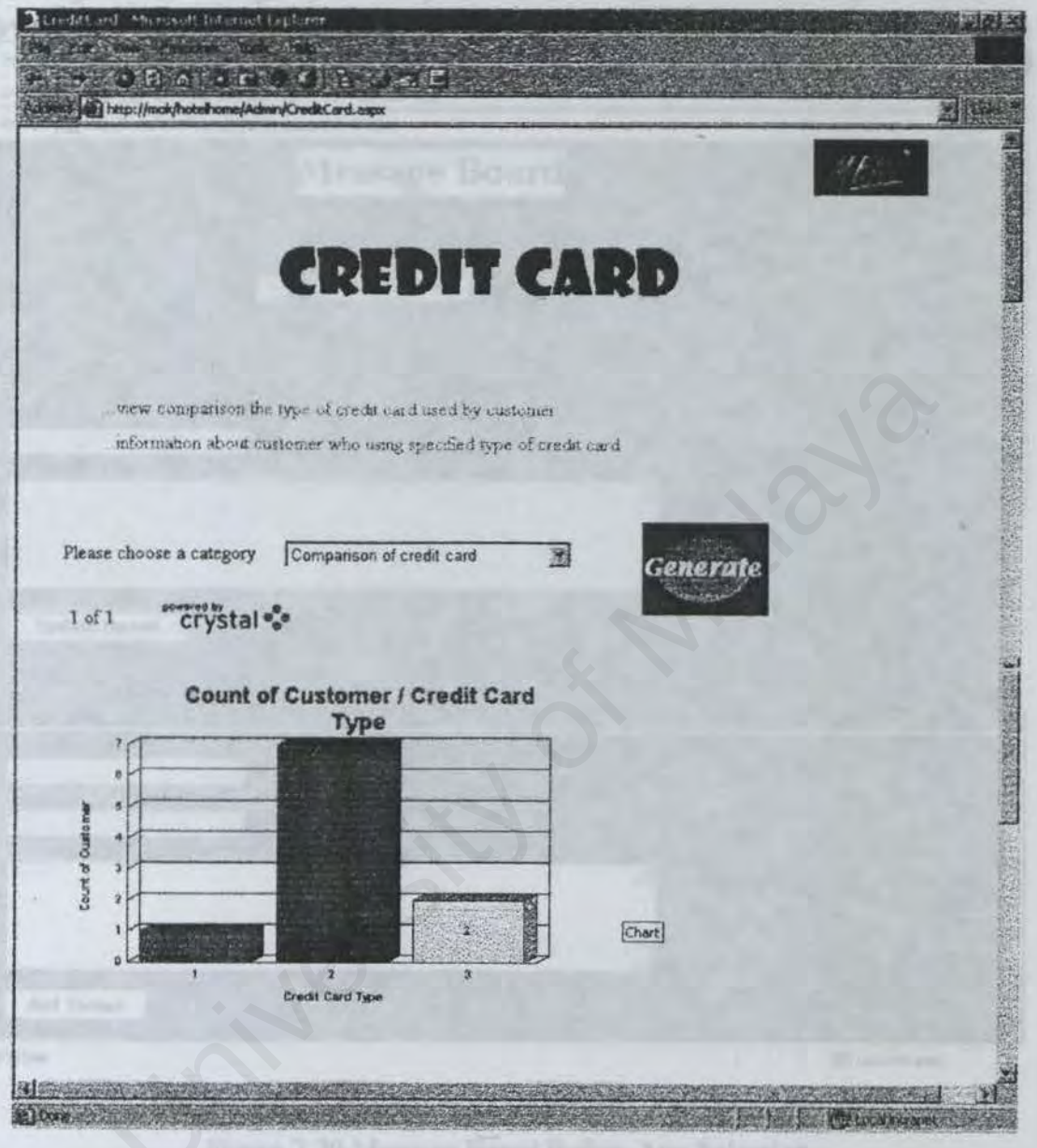

Figure 2.28 Report Generated On Comparison Of Credit Card

7. Figure 2.29 shows the **Manager Message Board** link page. User can view other message thread through by selecting the title of the thread from the dropdown box.

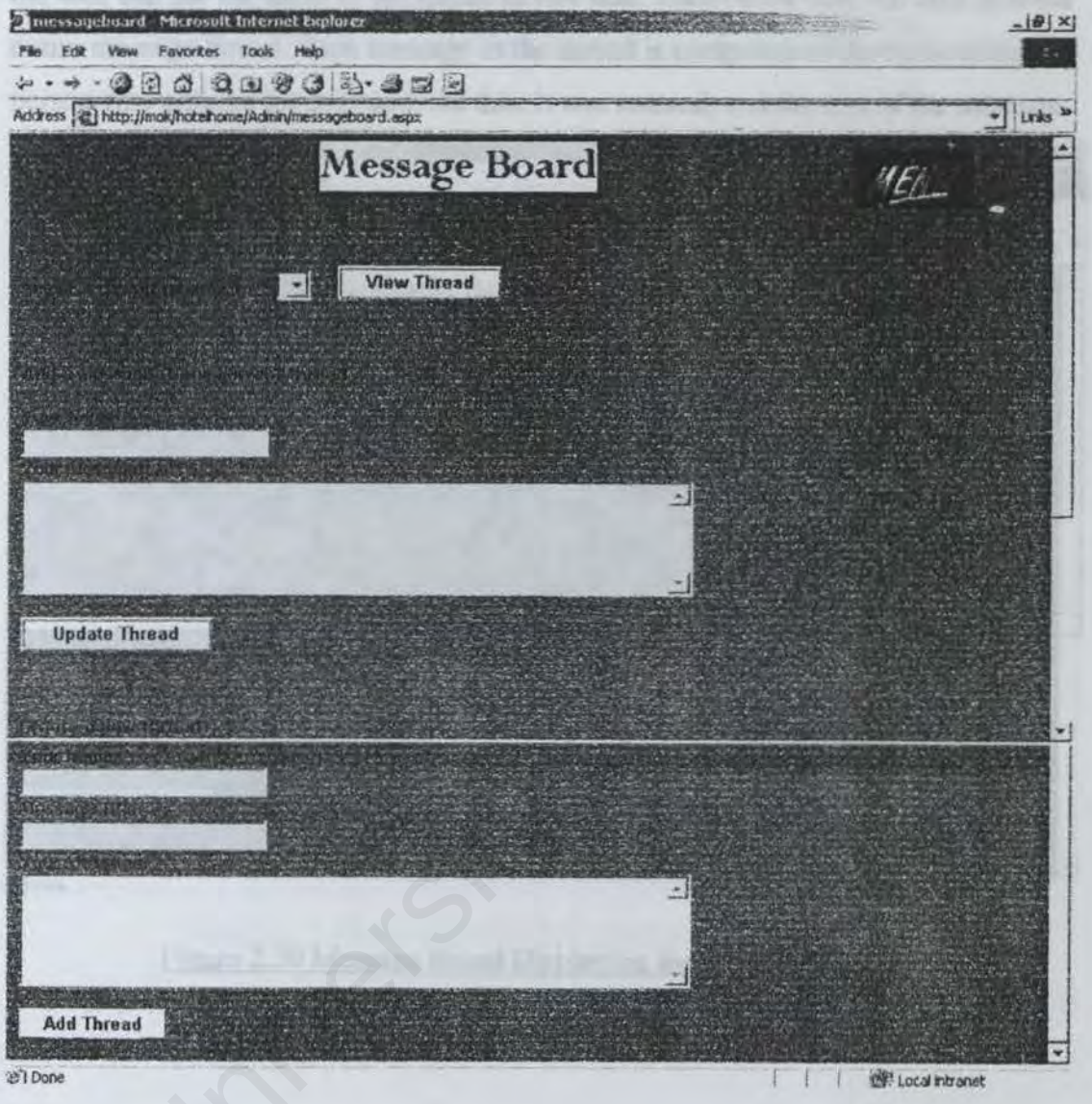

Figure 2.29 Message Board Before Any Selection

7. Figure 2.29 shows the **Manager Message Board** link page. User can view other message thread through by selecting the title of the thread from the dropdown box.

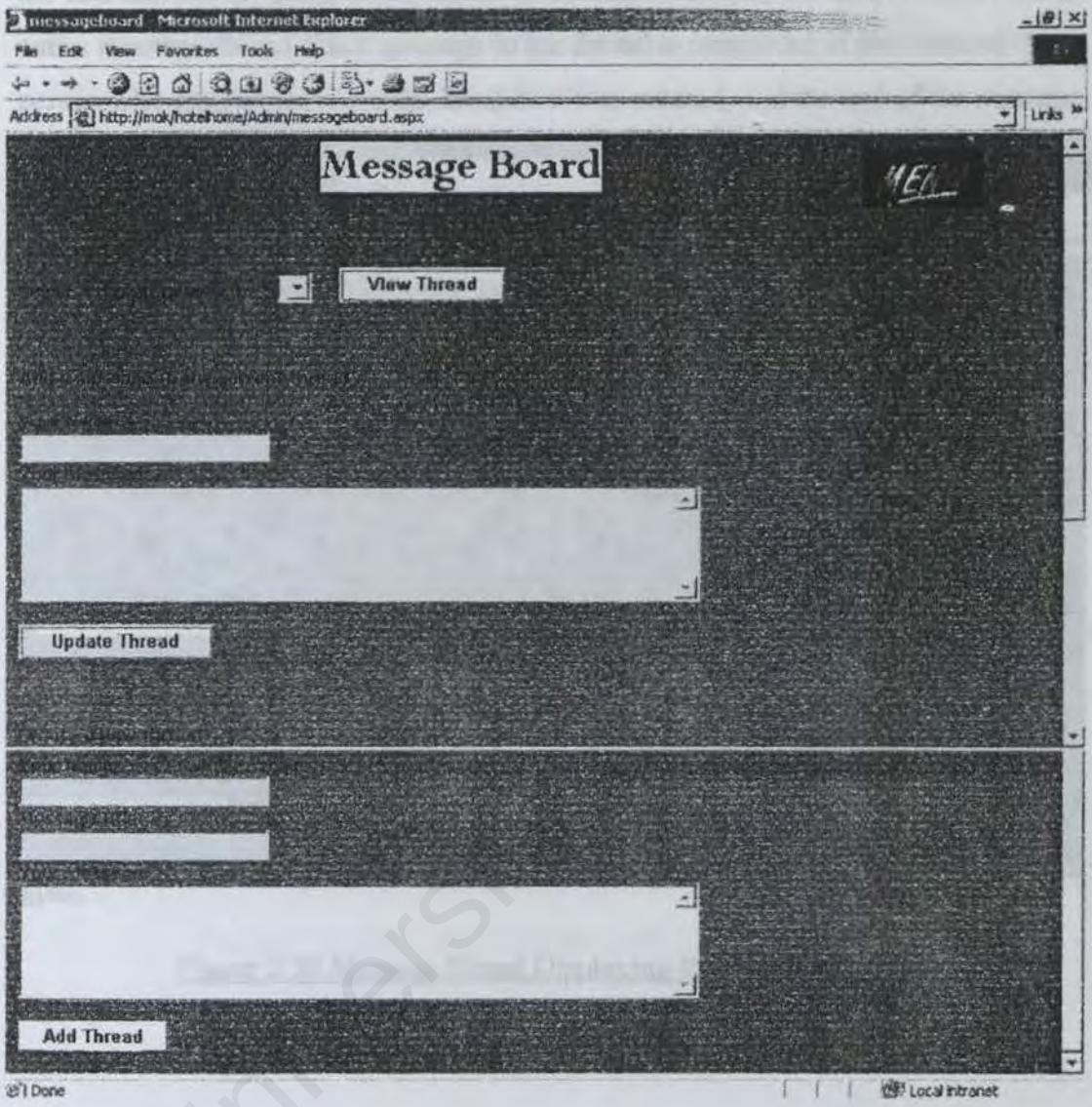

Figure 2.29 Message Board Before Any Selection

Figure 2.30 shows the page after a thread has been selected. At the top of the page, the user can see the name of the thread in title text. Then below that, the user sees the entire message thread. Each message in the thread is composed of the name of the person who entered the message, the date it was entered, and the text of the message.

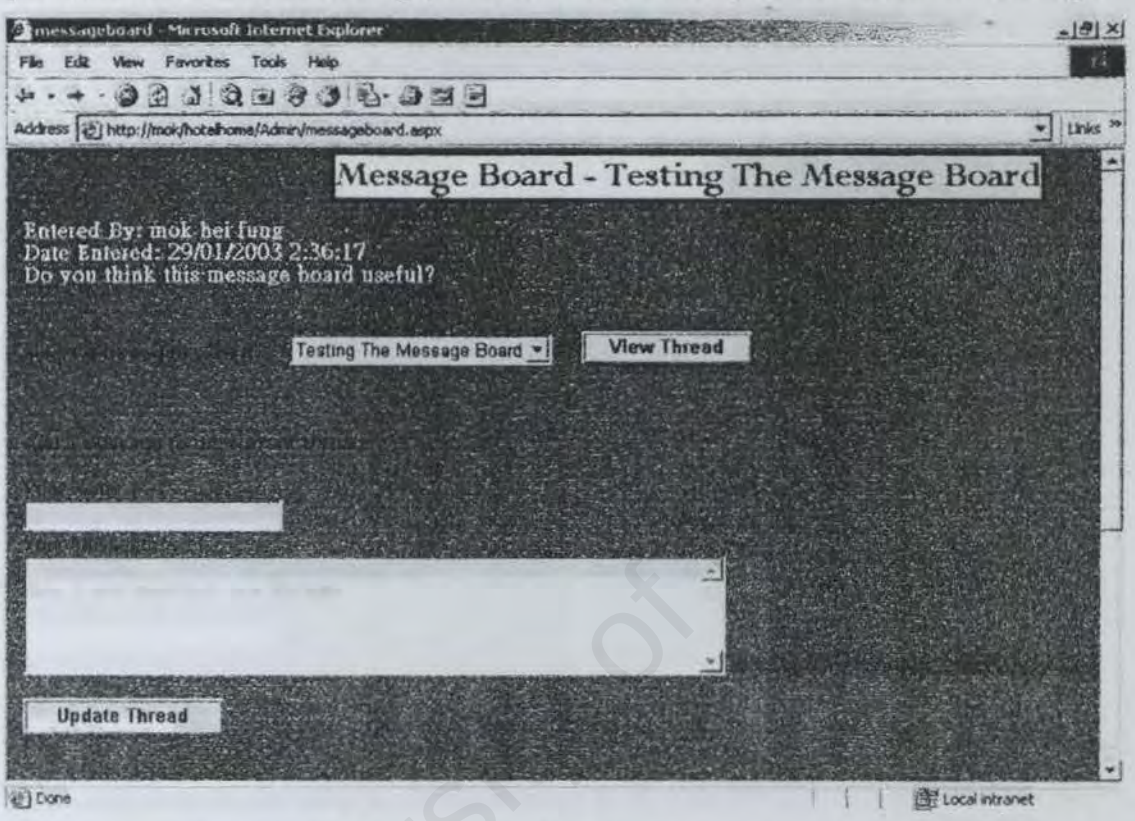

Figure 2.30 Message Board Displaying the Existing Thread.

When the user wishes to create a new thread, they use the bottom part of this page. Here, they enter their name, the title of the message, and the initial text of the thread. When the user clicks the **Add Thread** button, their message is added to the database and they see it as it is displayed in Figure 2.31

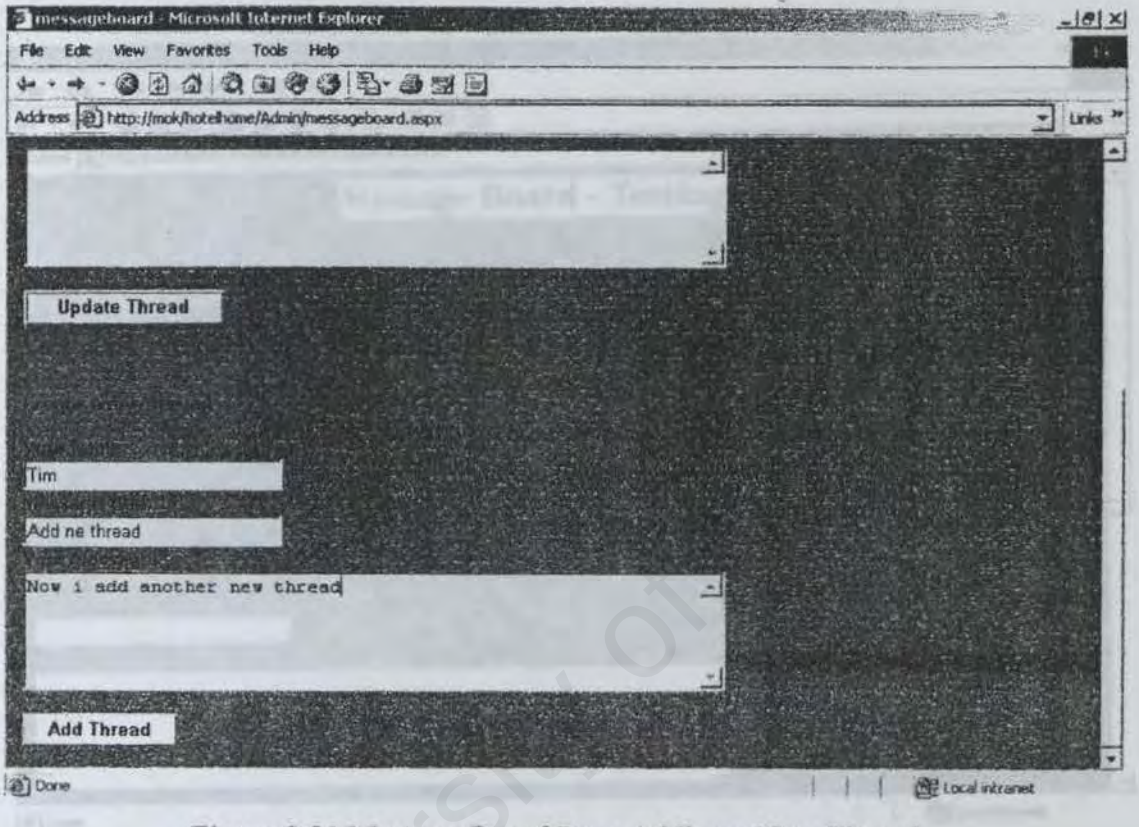

Figure 2.31 Message Board Page Adding a New Thread.

Other users can now view this thread and add their own messages to the thread. This is done through the middle section of the page. Here the user just enters their name and text of their message. They can see the addition of their text to the thread as shown in Figure 2.32.

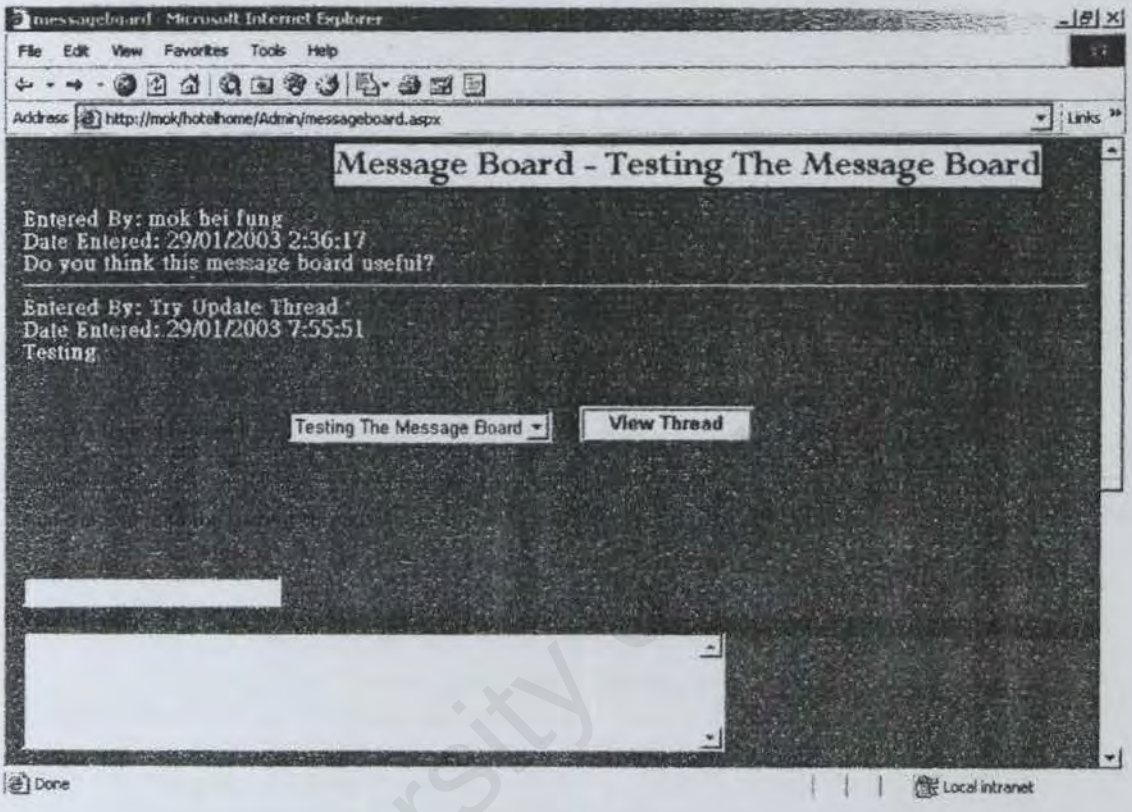

Figure 2.32 Message Board After Thread Has Been Updated.

SOURCE CODE

```
''source code for package reservation

<%@ Page Language="vb" AutoEventWireup="false" Codebehind="Packag
e.aspx.vb" Inherits="hotelhome.Package"%>
<%@ Import Namespace="System.Data" %>
<%@ Import Namespace="System.Data.OLEDB" %>
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.0 Transitional//EN">
<HTML>
      <HEAD>
            <title>Package</title>
            <script runat="server">

''populate dropdownlist control in page load

Sub Page_Load(ByVal Sender as Object, ByVal E as EventArgs)
   If Not IsPostBack then
      Dim DBConn as OleDbConnection
      Dim DBCommand As OleDbDataAdapter
      Dim DSPackageData as New DataSet

      DBConn = New OleDbConnection("Provider=SQLOLEDB.1;Integra
ted Security=SSPI;Persist Security Info=False;User
ID=mokheifung;Initial Catalog=HotelDB;Data Source=mok;Workstation
ID=MOK;Trusted_Connection=Yes")
      DBCommand = New OleDbDataAdapter _
         ("Select PackageID, PackageName " _
         & "From Package " _
         & "Order By PackageName",DBConn)
      DBCommand.Fill(DSPackageData, _
         "Package")
      ddlPackageID.DataSource = _
         DSPackageData.Tables("Package").DefaultView
      ddlPackageID.DataBind()
      pnlMakeReservation.Visible = True

   End If
End Sub

'Function that triggered when user click the button

Sub SubmitBtn_Click(Sender As Object, E As EventArgs)
   Dim DBConn as OleDbConnection
   Dim DBCommand As OleDbDataAdapter
   Dim DSRoomAvailable as New DataSet
   Dim DBInsert As New OleDbCommand

   DBConn = New OleDbConnection("Provider=SQLOLEDB.1;Integrated
Security=SSPI;Persist Security Info=False;User
ID=mokheifung;Initial Catalog=HotelDB;Data Source=mok;Workstation
ID=MOK;Trusted_Connection=Yes")
   DBCommand = New OleDbDataAdapter _
```

```
      :"Select Count(RoomReservationID) as TheCount " _
      & "From RoomReservations WHERE (PackageID = " _
      & ddlPackageID.SelectedItem.Value _
      & ") AND " _
      & "('" & txtArrivalDate.text & "' BETWEEN ArrivalDate " _
      & "AND DepartureDate) OR (PackageID = " _
      & ddlPackageID.SelectedItem.Value _
      & ") " _
      & "AND ('" & txtDepartureDate.text _
      & "' BETWEEN ArrivalDate AND DepartureDate) " _
      & "OR (PackageID = " _
      & ddlPackageID.SelectedItem.Value _
      & ") AND " _
      & "(ArrivalDate BETWEEN '" _
      & txtArrivalDate.text & "' AND '" _
      & txtDepartureDate.text & "') " _
      & "OR (PackageID = " _
      & ddlPackageID.SelectedItem.Value _
      & ") AND " _
      & "(DepartureDate BETWEEN '" _
      & txtArrivalDate.text & "' AND '" _
      & txtDepartureDate.text & "')", DBConn)
  DBCommand.Fill(DSRoomAvailable, _
      "RoomCount")
  If DSRoomAvailable.Tables("RoomCount"). _
      Rows(0).Item("TheCount") = 0 Then
      DBInsert.CommandText = "Insert Into RoomReservations " _
          & "(PackageID, ArrivalDate, DepartureDate, NumberOfPa
ckage, " _
          & "NumberOfAdult, NumberOfChildren) values (" _
          & ddlPackageID.SelectedItem.Value & ", " _
          & "'" & txtArrivalDate.text & "', " _
          & "'" & txtDepartureDate.text & "', " _
          & "'" & txtNumberOfPackage.text & "', " _
          & "'" & txtNumberOfAdult.text & "', " _
          & "'" & txtNumberOfChildren.text & "')"
      DBInsert.Connection = DBConn
      DBInsert.Connection.Open
      DBInsert.ExecuteNonQuery()

          Response.Redirect ("userform.aspx")
  Else

      Response.Redirect ("PackageReEnter.aspx")
  End If
  pnlMakeReservation.Visible = False

End Sub
              </script>
              <meta content="Microsoft Visual Studio.NET 7.0" n
ame="GENERATOR">
```

```
            <meta content="Visual Basic 7.0" name="CODE_LANGU
AGE">
            <meta content="JavaScript" name="vs_defaultClient
Script">
            <meta content="http://schemas.microsoft.com/intel
lisense/ie5" name="vs_targetSchema">
        </HEAD>
        <body MS_POSITIONING="GridLayout" bgColor="#ffffff">
            <form id="Form1" method="post" runat="server">
                <LI>
                    <asp:HyperLink id="HyperLink7" st
yle="Z-INDEX: 117; LEFT: 16px; POSITION: absolute; TOP:
136px" runat="server" Font-Size="X-Small" Font-Bold="True" Naviga
teUrl="HotelMainPage.aspx" ForeColor="Blue"
Font-Names="Times New Roman">Home</asp:HyperLink>
                    <asp:HyperLink id="HyperLink5" st
yle="Z-INDEX: 106; LEFT: 102px; POSITION: absolute; TOP:
136px" runat="server" Font-Size="X-Small" Font-Bold="True" Naviga
teUrl="Accommodation.aspx" ForeColor="Blue"
Font-Names="Times New Roman">Accommodation</asp:HyperLink>
                    <asp:HyperLink id="HyperLink3" st
yle="Z-INDEX: 104; LEFT: 253px; POSITION: absolute; TOP:
136px" runat="server" Font-Size="X-Small" Font-Bold="True" Naviga
teUrl="Package.aspx" ForeColor="Blue" Font-Names="Times New
Roman">Packages</asp:HyperLink>
                    <asp:HyperLink id="HyperLink2" st
yle="Z-INDEX: 103; LEFT: 371px; POSITION: absolute; TOP:
135px" runat="server" Font-Size="X-Small" Font-Bold="True" Naviga
teUrl="Amenities.aspx" ForeColor="Blue" Font-Names="Times
New Roman">Amenities</asp:HyperLink>
                    <asp:HyperLink id="HyperLink1" st
yle="Z-INDEX: 102; LEFT: 492px; POSITION: absolute; TOP:
135px" runat="server" Font-Size="X-Small" Font-Bold="True" Naviga
teUrl="OnlineReservation.aspx" ForeColor="Blue"
Font-Names="Times New Roman">Online Reservation</asp:HyperLink>
                    <asp:HyperLink id="HyperLink4" st
yle="Z-INDEX: 105; LEFT: 664px; POSITION: absolute; TOP:
136px" runat="server" Font-Size="X-Small" Font-Bold="True" Naviga
teUrl="Location.aspx" ForeColor="Blue" Font-Names="Times New
Roman">Location</asp:HyperLink>
                    <P></P>
                    <P></P>
                    <asp:panel id="pnlMakeReservation
" style="Z-INDEX: 101; LEFT: 120px; POSITION: absolute; TOP:
736px" runat="server" Font-Bold="True" Font-Size="Small" Font-Nam
es="Times New Roman" Height="360px" BorderStyle="None"
Width="500px" Font-Name="verdana" BackColor="#0000C0" ForeColor="
Yellow"><BR>   Select
PACKAGE:     
<asp:DropDownList id="ddlPackageID" runat="server">
                        <asp:ListItem Val
```

```
e="1">Economic Package</asp:ListItem>
                                                    <asp:ListItem Val
e="2">Family Package</asp:ListItem>
                                                    <asp:ListItem Val
e="3">Getaway Package</asp:ListItem>
                                                    <asp:ListItem Val
e="4">Presidential Package</asp:ListItem>
                                                </asp:DropDownList>
<P></P>   Arrival Date:  
<asp:TextBox id="txtArrivalDate" runat="server" Width="198px" Col
umns="25" MaxLength="30"></asp:TextBox>
<asp:Label id="Label3" runat="server" ForeColor="White">yyyy/mm/d
d</asp:Label>
<asp:RequiredFieldValidator id="rfvArrivalDate" runat="server" Fo
nt-Size="10pt" ControlToValidate="txtArrivalDate"
Display="Dynamic">
   Arrival Date is Required!
</asp:RequiredFieldValidator>
<asp:CompareValidator id="cvArrivalDate" runat="server" Font-Size
="10pt" ControlToValidate="txtArrivalDate" Display="Dynamic"
Operator="DataTypeCheck" Type="Date">
   Arrival Date must be a date!
</asp:CompareValidator>
<P></P>   Departure Date:  
<asp:TextBox id="txtDepartureDate" runat="server" Columns="25" Ma
xLength="30"></asp:TextBox>
<asp:Label id="Label4" runat="server" ForeColor="White">yyyy/mm/d
d</asp:Label>
<asp:RequiredFieldValidator id="rfvDepartureDate" runat="server"
Font-Size="10pt" ControlToValidate="txtDepartureDate"
Display="Dynamic">
   Departure Date is Required!
</asp:RequiredFieldValidator>
<asp:CompareValidator id="cvDepartureDate" runat="server" Font-Si
ze="10pt" ControlToValidate="txtDepartureDate"
Display="Dynamic" Operator="DataTypeCheck" Type="Date">
   Depart Date must be a date!
</asp:CompareValidator>
<P></P>   Number of Package wanted:  
<asp:TextBox id="txtNumberOfPackage" runat="server" Columns="25"
MaxLength="50"></asp:TextBox>
<P></P>   Number of Adult:  
<asp:TextBox id="txtNumberOfAdult" runat="server" Columns="25" Ma
xLength="50"></asp:TextBox>
<P></P>   Number of Children:  
<asp:TextBox id="txtNumberOfChildren" runat="server" Columns="25"
 MaxLength="50"></asp:TextBox>
<P></P>   
<asp:button id="butOK" onclick="SubmitBtn_Click" runat="server" F
ont-Names="Times New Roman" Font-Bold="True" Type="Submit"
Text="Check Availability"></asp:button>
```

```
<P> </P></asp:panel>
                                <asp:Image id="Image2" style="Z-I
NDEX: 107; LEFT: 2px; POSITION: absolute; TOP: 0px"
runat="server" Width="780px" Height="133px" ImageUrl="file:///F:\
Documents and Settings\Administrator\My Documents\My
Pictures\NEWPACKAGEHEADER.jpg" BorderStyle="Solid" BorderWidth="2
px" BorderColor="Black"></asp:Image>
                                <TABLE id="Table1" style="Z-INDEX
: 108; LEFT: 378px; WIDTH: 318px; POSITION: absolute; TOP:
215px; HEIGHT: 484px" cellSpacing="1" cellPadding="1" width="318"
bgColor="#330066" border="1">
                                    <TR>
                                        <TD style="WIDTH:
151px; HEIGHT: 24px" align="left"><STRONG><FONT
color="#ffffff">Package</FONT></STRONG></TD>
                                        <TD style="WIDTH:
520px; HEIGHT: 24px" align="middle"><STRONG><FONT
color="#ffffff">Description</FONT></STRONG></TD>
                                    </TR>
                                    <TR>
                                        <TD style="WIDTH:
151px; HEIGHT: 217px" align="left">
                                            <P><STRON
G><FONT color="#a9a9a9"><FONT color="#ffff00">Getaway
Package</FONT></FONT></STRONG></P>
                                            <P><STRON
G><FONT color="#a9a9a9"><FONT size="2">(RM 185 Nett 
per Night)</FONT></FONT></STRONG></P>
                                            <P><STRON
G><FONT color="darkgray"> </FONT></STRONG>
                                            <
asp:Image id="Image8" runat="server" Width="136px"
ImageUrl="file:///F:\Documents and Settings\Administrator\My Docu
ments\My Pictures\pack2.jpg" AlternateText="Getaway Package"
Height="128px"></asp:Image></P>
                                        </TD>
                                        <TD style="WIDTH:
520px; HEIGHT: 217px">
                                            <P>
                                            <
FONT face="verdana" color="darkgray" size="2"><STRONG><FONT
face="Times New Roman" size="3">

                Accommodation in spacious Deluxe
room with daily breakfast, buffet

                lunch for 2 persons</FONT>
</STRONG></FONT>
                                            </P>
                                            <P><STRON
G><FONT color="#a9a9a9" size="2">(Only available during
```

```
eekend)</FONT></STRONG></P>
                                                    </TD>
                                                </TR>
                                                <TR>
                                                    <TD style="WIDTH:
151px" align="left">
                                                        <P><STRON
G><FONT color="darkgray"><FONT color="#ffff00">Presidential
Package</FONT></FONT></STRONG></P>
                                                        <P><STRON
G><FONT color="darkgray"><FONT size="2">(RM 330 Nett 
per Night)</FONT></FONT></STRONG>
                                                            <
asp:Image id="Image6" runat="server" Width="137px"
Height="125px" ImageUrl="file:///F:\Documents and Settings\Admini
strator\My Documents\My Pictures\pack1.jpg"
AlternateText="Presidential Package"></asp:Image></P>
                                                        <P><FONT
face="verdana" color="darkgray"
size="2"><STRONG></STRONG></FONT> </P>
                                                    </TD>
                                                    <TD style="WIDTH:
520px">
                                                        <P>
                                                            <
FONT face="verdana" color="darkgray" size="2"><STRONG><FONT
face="Times New Roman" size="3">

                Accommodation in spacious Luxury
Suite with daily breakfast for 2 persons.</FONT>

</STRONG></FONT>
                                                        </P>
                                                        <P><FONT
face="verdana" color="darkgray" size="2"><STRONG><FONT
face="Times New Roman">(Only

                available during off peak season!)
</FONT></STRONG></FONT>
                                                        </P>
                                                    </TD>
                                                </TR>
                                            </TABLE>
                                            <TABLE id="Table3" style="Z-INDEX
: 109; LEFT: 19px; WIDTH: 330px; POSITION: absolute; TOP:
16px; HEIGHT: 482px" cellSpacing="1" cellPadding="1" width="330"
bgColor="#330066" border="1">
                                                <TR>
                                                    <TD style="WIDTH:
145px"><STRONG><FONT
color="#ffffff">Package</FONT></STRONG></TD>
```

```
                                                    <TD><STRONG><FONT
olor="#ffffff">Description</FONT></STRONG></TD>
                                                </TR>
                                                <TR>
                                                    <TD style="WIDTH:
145px; HEIGHT: 216px">
                                                        <P><STRON
><FONT
olor="#ffff00">Economic Package</FONT></STRONG></P>
                                                        <P><STRON
><FONT color="darkgray"><FONT size="2">(RM 110 Nett 
er Night)</FONT></FONT></STRONG>
                                                        <
sp:Image id="Image7" runat="server" Width="137px"
eight="125px" ImageUrl="file:///F:\Documents and Settings\Admini
rator\My Documents\My Pictures\pack4.jpg"
lternateText="Economic Package"></asp:Image></P>
                                                    </TD>
                                                    <TD style="HEIGHT
 216px">
                                                        <P>
                                                        <
RONG><FONT color="darkgray"><FONT face="verdana"
ize="2"><FONT face="Times New Roman" size="3">

                        Accommodation
 standard room with daily breakfast set lunch for 2

                        persons.</FONT> </FONT>
/FONT></STRONG>
                                                        </P>
                                                        <P><STRON
><FONT color="darkgray"><FONT size="2">(Only available
uring off peak season!) </FONT>

/FONT></STRONG>
                                                        </P>
                                                    </TD>
                                                </TR>
                                                <TR>
                                                    <TD style="WIDTH:
145px">
                                                        <P><STRON
><FONT color="#ffff33">Family Package</FONT></STRONG></P>
                                                        <P><STRON
><FONT color="darkgray"><FONT size="2">(RM 180 Nett 
er Night)</FONT></FONT></STRONG></P>
                                                        <P>
                                                        <
sp:Image id="Image9" runat="server"
mageUrl="file:///F:\Documents and Settings\Administrator\My Docu
```

```
ents\My Pictures\pack3.jpg" AlternateText="Family Package"
idth="137px" Height="125px"></asp:Image></P>
                                                    <P> 
/P>
                                                </TD>
                                                <TD>
                                                    <P>
                                                        <
TRONG><FONT color="darkgray">Accommodation in
pacious Deluxe room with daily

      breakfast for 2 persons. </FONT></STRONG>
                                                    </P>
                                                    <P><STRON
><FONT color="darkgray"><FONT size="2">(2 children below 12
ears old and sharing the

            same rooms with parents are entitled
ith complimentary breakfast) </FONT></FONT>
                                                        <
STRONG>
                                                    </P>
                                                </TD>
                                            </TR>
                                        </TABLE>
                                        <asp:Image id="Image1" style="Z-I
DEX: 110; LEFT: 728px; POSITION: absolute; TOP: 1096px"
unat="server" Width="47px" Height="61px" ImageUrl="file:///F:\Do
uments and Settings\Administrator\My Documents\My
ictures\rivmaj-ml-h.jpg"></asp:Image>
                                        <HR style="FONT-WEIGHT: bold; Z-I
DEX: 111; LEFT: 7px; WIDTH: 94.89%; COLOR: black; POSITION:
bsolute; TOP: 1120px; HEIGHT: 2px" width="94.89%" SIZE="2">
                                        <asp:HyperLink id="HyperLink21" s
yle="Z-INDEX: 112; LEFT: 259px; POSITION: absolute; TOP:
126px" runat="server" Font-Size="X-Small" NavigateUrl="HotelMain
age.aspx" ForeColor="Blue"
ont-Underline="True">Home</asp:HyperLink>
                                        <asp:HyperLink id="HyperLink20" s
yle="Z-INDEX: 113; LEFT: 306px; POSITION: absolute; TOP:
126px" runat="server" Font-Size="X-Small" NavigateUrl="Accommoda
ion.aspx" ForeColor="Blue"
ont-Underline="True">Accommodation</asp:HyperLink>
                                        <asp:HyperLink id="HyperLink19" s
yle="Z-INDEX: 114; LEFT: 408px; POSITION: absolute; TOP:
126px" runat="server" Font-Size="X-Small" NavigateUrl="Package.a
px" ForeColor="Blue"
ont-Underline="True">Packages</asp:HyperLink>
                                        <asp:HyperLink id="HyperLink12" s
yle="Z-INDEX: 115; LEFT: 424px; POSITION: absolute; TOP:
144px" runat="server" Font-Size="X-Small" NavigateUrl="Location.
```

```
aspx" ForeColor="Blue"
ont-Underline="True">Location</asp:HyperLink>
                                <asp:HyperLink id="HyperLink6" st
yle="Z-INDEX: 116; LEFT: 296px; POSITION: absolute; TOP:
144px" runat="server" Font-Size="X-Small" NavigateUrl="OnlineRes
ervation.aspx" ForeColor="Blue" Font-Underline="True">Online
Reservation</asp:HyperLink>
                                <asp:HyperLink id="HyperLink8" st
yle="Z-INDEX: 118; LEFT: 472px; POSITION: absolute; TOP:
128px" runat="server" ForeColor="Blue" NavigateUrl="Amenities.as
px" Font-Size="X-Small"
ont-Underline="True">Amenities</asp:HyperLink>
                </form>
                </LI>
        </body>
/HTML>
```

```
''Source code for user entry form


<%@ import namespace= "system.data"%>
<%@ import namespace= "system.data.oledb"%>
<%@ Page Language="vb" AutoEventWireup="false" Codebehind="userfo
rm.aspx.vb" Inherits="hotelhome.userform"%>
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.0 Transitional//EN">
<HTML>
      <HEAD>
            <title>userform</title>
            <script runat="server">
''Populate the dropdownlist control during page load

  Sub Page_Load(ByVal Sender as Object, ByVal E as EventArgs)
      If Not Page.IsPostBack Then
        Dim DBConn As OleDbConnection = new OleDbConnection("Pr
ovider=SQLOLEDB;User ID=mokheifung;Initial
Catalog=HotelDB;Data Source=mok;Workstation ID=MOK;Trusted_Connec
tion=Yes")

      Dim DBCommand as OleDbDataAdapter
      Dim DSPageData as new DataSet
      DBCommand = New OleDbDataAdapter _
          ("Select CCID, CCType " _
          & "From CreditCard " _
          & "Order By CCType",DBConn)
      DBCommand.Fill(DSPageData, _
          "CreditCard")
      ddlCCID.DataSource = _
          DSPageData.Tables("CreditCard").DefaultView
      ddlCCID.DataBind()
      End If

  End Sub


'Insert customer data into database
 Sub doSignup(Source as Object, E as EventArgs)
      Dim DBConn as OleDbConnection
      Dim DBCommand As OleDbDataAdapter
     'Dim DSCustomer as New DataSet
      Dim DBInsert As New OleDbCommand
      DBConn = New OleDbConnection("Provider=SQLOLEDB;User ID=m
kheifung;Initial Catalog=HotelDB;Data
Source=mok;Workstation ID=MOK;Trusted_Connection=Yes")
      DBCommand = New OleDbDataAdapter _
      ("Select Count(CusID) as TheCount " _
      & "From CustomerInformation WHERE CusID = ddlCCID.Selecte
dItem.Value",DBConn)
```

```
    DBInsert.CommandText = "Insert Into CustomerInformation "
            & "(CCID, FirstName, LastName,Age,Email,Tel,Address,Z
pCode,City,State,Country, "
            & " CCHolderName,CCNumber,CCExpDate) values (" _
            & ddlCCID.SelectedItem.Value & ", " _
            & "'" & txtFirstName.text & "', " _
            & "'" & txtLastName.text & "', " _
            & "'" & txtAge.text & "', " _
            & "'" & txtEmail.text & "', " _
            & "'" & txtTelephone.text & "', " _
            & "'" & txtAddress.text & "', " _
            & "'" & txtZipCode.text & "', " _
            & "'" & txtCity.text & "', " _
            & "'" & txtState.text & "', " _
            & "'" & txtCountry.text & "', " _
            & "'" & txtCCHolderName.text & "', " _
            & "'" & txtCCNumber.text & "', " _
            & "'" & txtCCExpiryDate.text & "')"

    DBInsert.Connection = DBConn
    DBInsert.Connection.Open
    DBInsert.ExecuteNonQuery()

'Display the customer reservation number
    TextBox4.Text = GetEditionNumber()

End Sub


  Function GetEditionNumber()
      Dim conn As OleDBConnection = New OleDbConnection("Provid
=SQLOLEDB;User ID=mokheifung;Initial Catalog=HotelDB;Data
urce=mok;Workstation ID=MOK;Trusted_Connection=Yes")
      Dim cmd As OleDbCommand = New OleDbCommand("SELECT MAX(Ro
ReservationID) from RoomReservations", conn)
      Dim workParam As OleDbParameter
      conn.Open()
      cmd.ExecuteScalar()
      workParam = cmd.Parameters.Add(New OleDbParameter("@RoomR
ervationID", OleDbType.Integer, 4))
      workParam.Direction = ParameterDirection.Output

      Dim id As String = cmd.ExecuteScalar
      conn.Close()
      Return id
  End Function
```

```
            </script>
            <meta name="GENERATOR" content="Microsoft Visual
udio.NET 7.0">
            <meta name="CODE_LANGUAGE" content="Visual Basic
0">
            <meta name="vs_defaultClientScript" content="Java
ript">
            <meta name="vs_targetSchema" content="http://sche
s.microsoft.com/intellisense/ie5">
      </HEAD>
      <body MS_POSITIONING="GridLayout" bgColor="#000000">
            <form id="Form1" method="post" runat="server">
                  <asp:image id="Image1" style="Z-INDEX: 10
 LEFT: 0px; POSITION: absolute; TOP: 0px" runat="server"
rderWidth="2px" BorderColor="Black" BorderStyle="Solid" ImageUr
"file:///C:\My Documents\My Pictures\new header online
servation.jpg" Height="133px" Width="780px"></asp:image>
                  <asp:Button id="Button1" style="Z-INDEX:
9; LEFT: 324px; POSITION: absolute; TOP: 579px"
click="doSignup" runat="server" Text="Reserve Now!"></asp:Butto

                  <asp:Label id="Label14" style="Z-INDEX: 1
; LEFT: 11px; POSITION: absolute; TOP: 682px"
nat="server" Width="507px" Font-Bold="True" ForeColor="#E0E0E0"
ackColor="Blue">Please remember your Reservation Number
r reference later, thank you!</asp:Label>
                  <asp:label id="Label2" style="Z-INDEX: 13
 LEFT: 36px; POSITION: absolute; TOP: 495px"
nat="server" Font-Bold="True" ForeColor="Blue" BackColor="#E0E0
">Credit Card Number:</asp:label>
                  <asp:label id="Label18" style="Z-INDEX: 1
; LEFT: 36px; POSITION: absolute; TOP: 519px"
nat="server" Font-Bold="True" ForeColor="Blue" BackColor="#E0E0
">Credit Card Expiry Date:</asp:label>
                  <asp:label id="Label1" style="Z-INDEX: 13
 LEFT: 36px; POSITION: absolute; TOP: 423px"
nat="server" Font-Bold="True" ForeColor="White" Font-Underline=
rue">Credit Card Information</asp:label>
                  <asp:label id="Label16" style="Z-INDEX: 1
; LEFT: 36px; POSITION: absolute; TOP: 447px"
nat="server" Font-Bold="True" ForeColor="Blue" BackColor="#E0E0
">Credit Card's Holder Name:</asp:label>
                  <asp:label id="Label17" style="Z-INDEX: 1
; LEFT: 36px; POSITION: absolute; TOP: 471px"
nat="server" Height="14px" Width="141px" Font-Bold="True" ForeC
or="Blue" BackColor="#E0E0E0">Credit Card
pe:</asp:label>
                  <asp:Label id="Label3" style="Z-INDEX: 12
 LEFT: 48px; POSITION: absolute; TOP: 272px"
nat="server" BorderColor="#E0E0E0" Font-Bold="True" ForeColor="
ue" BackColor="#E0E0E0">First Name:</asp:Label>
```

```
                    <asp:Label id="Label4" style="Z-INDEX: 10
EFT: 48px; POSITION: absolute; TOP: 296px"
t="server" BorderColor="#E0E0E0" Font-Bold="True" ForeColor="
" BackColor="#E0E0E0">Last Name:</asp:Label>
                    <asp:Label id="Label6" style="Z-INDEX: 11
EFT: 48px; POSITION: absolute; TOP: 320px"
t="server" BorderColor="#E0E0E0" Font-Bold="True" ForeColor="
" BackColor="#E0E0E0">Age:</asp:Label>
                    <asp:Label id="Label5" style="Z-INDEX: 11
EFT: 48px; POSITION: absolute; TOP: 344px"
t="server" BorderColor="#E0E0E0" Font-Bold="True" ForeColor="
" BackColor="#E0E0E0">Email:</asp:Label>
                    <asp:Label id="Label8" style="Z-INDEX: 11
EFT: 48px; POSITION: absolute; TOP: 368px"
t="server" BorderColor="#E0E0E0" Width="88px" Font-Bold="True
reColor="Blue" BackColor="#E0E0E0">Telephone</asp:Label>
                    <asp:Label id="Label12" style="Z-INDEX: 1
 LEFT: 432px; POSITION: absolute; TOP: 272px"
t="server" Font-Bold="True" ForeColor="Blue" BackColor="#E0E0
>Address:</asp:Label>
                    <asp:Label id="Label9" style="Z-INDEX: 11
EFT: 432px; POSITION: absolute; TOP: 296px"
t="server" Height="18px" Width="96px" Font-Bold="True" ForeCo
="Blue" BackColor="#E0E0E0">Zip Code:</asp:Label>
                    <asp:Label id="Label11" style="Z-INDEX: 1
 LEFT: 432px; POSITION: absolute; TOP: 320px"
t="server" Font-Bold="True" ForeColor="Blue" BackColor="#E0E0
>City:</asp:Label>
                    <asp:Label id="Label10" style="Z-INDEX: 1
 LEFT: 432px; POSITION: absolute; TOP: 344px"
t="server" Font-Bold="True" ForeColor="Blue" BackColor="#E0E0
>State:</asp:Label>
                    <asp:Label id="Label13" style="Z-INDEX: 1
 LEFT: 432px; POSITION: absolute; TOP: 368px"
t="server" Font-Bold="True" ForeColor="Blue" BackColor="#E0E0
>Country:</asp:Label>
                    <asp:label id="Label19" style="Z-INDEX: 1
 LEFT: 160px; POSITION: absolute; TOP: 184px"
t="server" Font-Bold="True" ForeColor="#C0C000" Font-Size="Sm
" Font-Italic="True"> to Century Hotel, there are rooms
iting for you, please fill in the following information for gu
nteed reservation.</asp:label>
                    <asp:hyperlink id="HyperLink6" style="Z-I
X: 107; LEFT: 17px; POSITION: absolute; TOP: 139px"
t="server" Font-Size="X-Small" NavigateUrl="HotelMainPage.asp
Font-Bold="True" ForeColor="Blue">Home</asp:hyperlink>
                    <asp:hyperlink id="HyperLink5" style="Z-I
X: 105; LEFT: 106px; POSITION: absolute; TOP: 140px"
t="server" Font-Size="X-Small" NavigateUrl="Accommodation.asp
Font-Bold="True"
eColor="Blue">Accommodation</asp:hyperlink>
```

```
                    <asp:hyperlink id="HyperLink3" style="Z-I
NDEX: 103; LEFT: 257px; POSITION: absolute; TOP: 140px"
runat="server" Font-Size="X-Small" NavigateUrl="Package.aspx" Fon
t-Bold="True" ForeColor="Blue">Package</asp:hyperlink>
                    <asp:hyperlink id="HyperLink2" style="Z-I
NDEX: 102; LEFT: 369px; POSITION: absolute; TOP: 139px"
runat="server" Font-Size="X-Small" NavigateUrl="Amenities.aspx" F
ont-Bold="True" ForeColor="Blue">Amenities</asp:hyperlink>
                    <asp:hyperlink id="HyperLink1" style="Z-I
NDEX: 101; LEFT: 490px; POSITION: absolute; TOP: 139px"
runat="server" Font-Size="X-Small" NavigateUrl="OnlineReservation
.aspx" Font-Bold="True" ForeColor="Blue">Online
Reservation</asp:hyperlink>
                    <asp:hyperlink id="HyperLink4" style="Z-I
NDEX: 104; LEFT: 661px; POSITION: absolute; TOP: 140px"
runat="server" Font-Size="X-Small" NavigateUrl="Location.aspx" Fo
nt-Bold="True" ForeColor="Blue">Location</asp:hyperlink>
                    <asp:TextBox id="txtFirstName" style="Z-I
NDEX: 122; LEFT: 144px; POSITION: absolute; TOP: 272px"
runat="server" BorderWidth="2px" BorderColor="Blue" BorderStyle="
Inset"></asp:TextBox>
                    <asp:TextBox id="txtLastName" style="Z-IN
DEX: 123; LEFT: 144px; POSITION: absolute; TOP: 296px"
runat="server" BorderWidth="2px" BorderColor="Blue" BorderStyle="
Inset"></asp:TextBox>
                    <asp:TextBox id="txtAge" style="Z-INDEX:
124; LEFT: 144px; POSITION: absolute; TOP: 320px"
runat="server" BorderWidth="2px" BorderColor="Blue" BorderStyle="
Inset"></asp:TextBox>
                    <asp:TextBox id="txtEmail" style="Z-INDEX
: 125; LEFT: 144px; POSITION: absolute; TOP: 344px"
runat="server" BorderWidth="2px" BorderColor="Blue" BorderStyle="
Inset"></asp:TextBox>
                    <asp:TextBox id="txtTelephone" style="Z-I
NDEX: 126; LEFT: 144px; POSITION: absolute; TOP: 368px"
runat="server" BorderWidth="2px" BorderColor="Blue" BorderStyle="
Inset"></asp:TextBox>
                    <asp:TextBox id="txtAddress" style="Z-IND
EX: 127; LEFT: 544px; POSITION: absolute; TOP: 272px"
runat="server" BorderWidth="2px" BorderColor="Blue" BorderStyle="
Inset"></asp:TextBox>
                    <asp:TextBox id="txtZipCode" style="Z-IND
EX: 128; LEFT: 544px; POSITION: absolute; TOP: 296px"
runat="server" BorderWidth="2px" BorderColor="Blue" BorderStyle="
Inset"></asp:TextBox>
                    <asp:TextBox id="txtCity" style="Z-INDEX:
129; LEFT: 544px; POSITION: absolute; TOP: 320px"
runat="server" BorderWidth="2px" BorderColor="Blue" BorderStyle="
Inset"></asp:TextBox>
                    <asp:TextBox id="txtState" style="Z-INDEX
: 130; LEFT: 544px; POSITION: absolute; TOP: 344px"
```

```
unat="server" BorderWidth="2px" BorderColor="Blue" BorderStyle="
nset"></asp:TextBox>
                    <asp:TextBox id="txtCountry" style="Z-IND
X: 131; LEFT: 544px; POSITION: absolute; TOP: 368px"
unat="server" BorderWidth="2px" BorderColor="Blue" BorderStyle="
nset"></asp:TextBox>
                    <asp:TextBox id="txtCCHolderName" style="
-INDEX: 134; LEFT: 236px; POSITION: absolute; TOP: 447px"
unat="server" BorderColor="Blue"></asp:TextBox>
                    <asp:TextBox id="txtCCNumber" style="Z-IN
EX: 135; LEFT: 236px; POSITION: absolute; TOP: 495px"
unat="server" BorderColor="Blue"></asp:TextBox>
                    <asp:TextBox id="txtCCExpiryDate" style="
-INDEX: 136; LEFT: 236px; POSITION: absolute; TOP: 519px"
unat="server" BorderColor="Blue"></asp:TextBox>
                    <asp:DropDownList id="ddlCCID" style="Z-I
DEX: 137; LEFT: 236px; POSITION: absolute; TOP: 471px"
unat="server" Font-Bold="True" Font-Names="Times New Roman" Back
olor="Lavender">
                        <asp:ListItem Value="1">Master Ca
d</asp:ListItem>
                        <asp:ListItem Value="2">Visa Card
/asp:ListItem>
                        <asp:ListItem Value="3">American
xpress</asp:ListItem>
                    </asp:DropDownList>
                    <asp:TextBox id="TextBox4" style="Z-INDEX
 140; LEFT: 540px; POSITION: absolute; TOP: 677px"
unat="server" Width="56px"></asp:TextBox>
                    <asp:HyperLink id="HyperLink10" style="Z-
NDEX: 141; LEFT: 256px; POSITION: absolute; TOP: 736px"
unat="server" Font-Size="X-Small" NavigateUrl="HotelMainPage.asp
" ForeColor="Blue"
ont-Underline="True">Home</asp:HyperLink>
                    <asp:HyperLink id="HyperLink8" style="Z-I
DEX: 142; LEFT: 408px; POSITION: absolute; TOP: 736px"
unat="server" Font-Size="X-Small" NavigateUrl="Package.aspx" For
eColor="Blue" Font-Underline="True">Packages</asp:HyperLink>
                    <asp:HyperLink id="HyperLink11" style="Z-
NDEX: 143; LEFT: 384px; POSITION: absolute; TOP: 752px"
unat="server" Font-Size="X-Small" NavigateUrl="Location.aspx" Fo
eColor="Blue"
ont-Underline="True">Location</asp:HyperLink>
                    <asp:HyperLink id="HyperLink7" style="Z-I
DEX: 144; LEFT: 304px; POSITION: absolute; TOP: 736px"
unat="server" Font-Size="X-Small" NavigateUrl="Accommodation.asp
" ForeColor="Blue"
ont-Underline="True">Accommodation</asp:HyperLink>
                    <asp:HyperLink id="HyperLink9" style="Z-I
DEX: 145; LEFT: 272px; POSITION: absolute; TOP: 752px"
unat="server" Font-Size="X-Small" NavigateUrl="OnlineReservation
```

```
aspx" ForeColor="Blue" Font-Underline="True">Online
eservation</asp:HyperLink>
                        <HR style="FONT-WEIGHT: bold; Z-INDEX: 14
; LEFT: 8px; WIDTH: 94.7%; COLOR: black; POSITION:
bsolute; TOP: 736px; HEIGHT: 2px" width="94.7%" SIZE="2">
                        <asp:Image id="Image3" style="Z-INDEX: 14
; LEFT: 728px; POSITION: absolute; TOP: 704px"
unat="server" ImageUrl="file:///F:\Documents and Settings\Admini
trator\My Documents\My Pictures\rivmaj-ml-h.jpg"
eight="61px" Width="47px"></asp:Image>
                        <asp:ValidationSummary id="ValidationSumm
ry1" style="Z-INDEX: 148; LEFT: 490px; POSITION: absolute;
OP: 398px" runat="server"></asp:ValidationSummary>
                        <asp:RequiredFieldValidator id="RequiredF
eldValidator1" style="Z-INDEX: 149; LEFT: 304px; POSITION:
bsolute; TOP: 304px" runat="server" ErrorMessage="Please fill in
last name" ControlToValidate="txtLastName"
isplay="Dynamic">*</asp:RequiredFieldValidator>
                        <asp:RequiredFieldValidator id="RequiredF
eldValidator2" style="Z-INDEX: 150; LEFT: 304px; POSITION:
bsolute; TOP: 328px" runat="server" ErrorMessage="Please fill in
age." ControlToValidate="txtAge"
isplay="Dynamic">*</asp:RequiredFieldValidator>
                        <asp:RequiredFieldValidator id="RequiredF
eldValidator3" style="Z-INDEX: 151; LEFT: 304px; POSITION:
bsolute; TOP: 344px" runat="server" ErrorMessage="Please fill in
email address."
ontrolToValidate="txtEmail">*</asp:RequiredFieldValidator>
                        <asp:RequiredFieldValidator id="RequiredF
eldValidator4" style="Z-INDEX: 152; LEFT: 304px; POSITION:
bsolute; TOP: 368px" runat="server" ErrorMessage="Please fill in
telephone number" ControlToValidate="txtTelephone"
isplay="Dynamic">*</asp:RequiredFieldValidator>
                        <asp:RequiredFieldValidator id="RequiredF
eldValidator5" style="Z-INDEX: 153; LEFT: 304px; POSITION:
bsolute; TOP: 280px" runat="server" ErrorMessage="Please fill in
first name." ControlToValidate="txtFirstName"
isplay="Dynamic">*</asp:RequiredFieldValidator>
                        <asp:RequiredFieldValidator id="RequiredF
eldValidator6" style="Z-INDEX: 154; LEFT: 704px; POSITION:
bsolute; TOP: 280px" runat="server" ErrorMessage="Please fill in
address" ControlToValidate="txtAddress"
isplay="Dynamic">*</asp:RequiredFieldValidator>
                        <asp:RequiredFieldValidator id="RequiredF
eldValidator7" style="Z-INDEX: 157; LEFT: 704px; POSITION:
bsolute; TOP: 304px" runat="server" Width="8px" ErrorMessage="Pl
ase fill in zip code" ControlToValidate="txtZipCode"
isplay="Dynamic">*</asp:RequiredFieldValidator>
                        <asp:RequiredFieldValidator id="RequiredF
eldValidator8" style="Z-INDEX: 158; LEFT: 704px; POSITION:
bsolute; TOP: 328px" runat="server" ErrorMessage="Please fill in
```

```
ity" ControlToValidate="txtCity"
isplay="Dynamic">*</asp:RequiredFieldValidator>
                    <asp:RequiredFieldValidator id="RequiredF
eldValidator9" style="Z-INDEX: 159; LEFT: 704px; POSITION:
bsolute; TOP: 352px" runat="server" ErrorMessage="Please fill in
tate" ControlToValidate="txtState"
isplay="Dynamic">*</asp:RequiredFieldValidator>
                    <asp:RequiredFieldValidator id="RequiredF
eldValidator10" style="Z-INDEX: 160; LEFT: 704px; POSITION:
bsolute; TOP: 368px" runat="server" ErrorMessage="Please fill in
country" ControlToValidate="txtCountry"
isplay="Dynamic">*</asp:RequiredFieldValidator>
                    <asp:RequiredFieldValidator id="RequiredF
eldValidator11" style="Z-INDEX: 161; LEFT: 396px; POSITION:
bsolute; TOP: 503px" runat="server" ErrorMessage="Please fill in
credit card number" ControlToValidate="txtCCNumber"
isplay="Dynamic">*</asp:RequiredFieldValidator>
                    <asp:RequiredFieldValidator id="RequiredF
eldValidator12" style="Z-INDEX: 162; LEFT: 396px; POSITION:
bsolute; TOP: 527px" runat="server" ErrorMessage="Please fill in
credit card expiry date"
ontrolToValidate="txtCCExpiryDate" Display="Dynamic">*</asp:Requ
redFieldValidator>
                    <asp:RequiredFieldValidator id="RequiredF
eldValidator13" style="Z-INDEX: 163; LEFT: 396px; POSITION:
bsolute; TOP: 447px" runat="server" ErrorMessage="Please fill in
credit card's holder name"
ontrolToValidate="txtCCHolderName" Display="Dynamic">*</asp:Requ
redFieldValidator>
                    <asp:Label id="Label7" style="Z-INDEX: 16
; LEFT: 40px; POSITION: absolute; TOP: 184px"
unat="server" Font-Size="X-Large" Font-Bold="True" ForeColor="Re
" Font-Names="Perpetua" BackColor="Black"
ont-Italic="True">Welcome</asp:Label>
                </form>
        </body>
/HTML>
```

```
''Source code for Administration Module-Generate report

Imports CrystalDecisions.CrystalReports.Engine
''Shared library used for database logon and passing datasets
Imports CrystalDecisions.Shared
''These libraries used for database connection and dataset creati
on
Imports System.Data
Imports System.Data.OleDb
Imports CrystalDecisions.Web.Design

Public Class WebForm3
    Inherits System.Web.UI.Page
    Dim crReportDocument As New CrystalReport3()
    '' Use Dataset object to pass data into report using dataset
    Dim DSAge As DataSet
    '' Use adoOleDbConnection to connect to the SQL database
    Dim adoOleDbConnection As OleDbConnection
    Dim adoOleDbDataAdapter As OleDbDataAdapter
    Protected WithEvents TextBox1 As System.Web.UI.WebControls.Te
xtBox
    Protected WithEvents Label1 As System.Web.UI.WebControls.Labe

    Protected WithEvents Label2 As System.Web.UI.WebControls.Labe

    Protected WithEvents Panel1 As System.Web.UI.WebControls.Pane

    Protected WithEvents Label3 As System.Web.UI.WebControls.Labe

    Protected WithEvents ImageButton1 As System.Web.UI.WebControl
.ImageButton
    Protected WithEvents ImageButton2 As System.Web.UI.WebControl
.ImageButton
    Protected WithEvents Label4 As System.Web.UI.WebControls.Labe


    Protected WithEvents CrystalReportViewer3 As CrystalDecisions
Web.CrystalReportViewer

Region " Web Form Designer Generated Code "

    'This call is required by the Web Form Designer.
    <System.Diagnostics.DebuggerStepThrough()> Private Sub Initia
izeComponent()

    End Sub

    Private Sub Page_Init(ByVal sender As System.Object, ByVal e
s System.EventArgs) Handles MyBase.Init
        'CODEGEN: This method call is required by the Web Form De
igner
```

```
        'Do not modify it using the code editor.
        InitializeComponent()

    End Sub

nd Region

    Private Sub Page_Load(ByVal sender As System.Object, ByVal e
System.EventArgs) Handles MyBase.Load
        ''check the user authentication
        If Session("AD_ID") Is Nothing Then
            Response.Redirect("./AdminLogin.aspx")
        End If

        Panel1.Visible = False

        'Put user code to initialize the page here
        Dim connectionString As String = ""
        ''Enter the log on information for your database
        connectionString = "Provider=SQLOLEDB.1;Integrated Securi
=SSPI;Persist Security Info=False;User
=mokheifung;Initial Catalog=HotelDB;Data Source=mok;Workstation
D=MOK;Trusted_Connection=Yes"

        ''Create and open a connection using the connection strin

        adoOleDbConnection = New OleDbConnection(connectionString

        ''Build a SQL statement to query the datasource
        Dim sqlString As String = ""

        sqlString = "SELECT CusID,Age FROM CustomerInformation"
        ''Retrieve the data using the SQL statement
        adoOleDbDataAdapter = New OleDbDataAdapter(sqlString, ado
eDbConnection)
        ''Create a instance of a Dataset
        DSAge = New DataSet()


        ''Fill the dataset with the data with author information.
        ''The table name used in the Fill method must be identica
to the name
        ''of the table in the report.
        adoOleDbDataAdapter.Fill(DSAge, "CustomerInformation")


        ''Pass the dataset to the report

        crReportDocument.Database.Tables(0).SetDataSource(DSAge)
```

```
        ''View the report


        Dim paramFields As CrystalDecisions.Shared.ParameterField

        Dim paramField As CrystalDecisions.Shared.ParameterField
        Dim discreteVal As CrystalDecisions.Shared.ParameterDiscr
eValue

        paramFields = New CrystalDecisions.Shared.ParameterFields

        paramField = New CrystalDecisions.Shared.ParameterField()

        paramField.ParameterFieldName = "paramAge"
        discreteVal = New CrystalDecisions.Shared.ParameterDiscre
Value()
        discreteVal.Value = TextBox1.Text

        paramField.CurrentValues.Add(discreteVal)
        paramFields.Add(paramField)

        CrystalReportViewer3.ParameterFieldInfo = paramFields


        CrystalReportViewer3.ReportSource = crReportDocument
    End Sub

    Private Sub Button1_Click(ByVal sender As System.Object, ByVa
e As System.EventArgs)



    End Sub

    Private Sub ImageButton1_Click(ByVal sender As System.Object,
yVal e As System.Web.UI.ImageClickEventArgs) Handles
ageButton1.Click
        Panel1.Visible = True
    End Sub

    Private Sub ImageButton2_Click(ByVal sender As System.Object,
yVal e As System.Web.UI.ImageClickEventArgs) Handles
ageButton2.Click
        Response.Redirect("success_login.aspx")
    End Sub
d Class
```